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INDEX TO VOLUME VI. (New Series)

Aird, J. W., Cancer of the Breast, 176.
Alley, J. N., The Relation of Temperature to Incipient Tuberculosis, 237.
Anesthesia, Ether, 261.
Anesthesia, Local, 267.
Anesthesia, Nitrous Oxid and Oxygen, 264.
Appendicitis in Children, 307.
Asiatic Cholera at San Lazaro Hospital, Treatment of, 178.
Autoserotherapy, 223.

Baar, Gustav, Urobilin in the Urine, 130.
Baldwin, S. C., Scoliosis, 38.
Barbee, C. M., Sugar Solution by Proctoclysis in Postoperative Treatment, 273.
Beckman, E. H., A Plea for Early Operation for Cancer of Lower Lip, 1; Decortication of the Lung for Old Empyema, 68.
Behle, A. C., Tuberculous Peritonitis, 16.
Beri-Beri, Report of a Case of, 284.
Besson, John, Autoserotherapy, 341; Why the Cystoscope, 51.
Bloodgood, J. C., Cancer Control, Precancerous Lesions, 111.
Blood-Pressure Readings in General Practice, 105.
Bone Saw, A New Hand-Driven Circular, Including a Flexible Shaft that can be Adapted to Various Usages, 142.
Book Reviews.
  Abt and Ridlon: Pediatrics and Orthopedic Surgery, 90, 357.
  Adams: Treatment of Chronic Leg Ulcers, 153.
  Adami and McCrae: A Text-Book of Pathology, 357.
  Allen: Local and Regional Anesthesia, 391.
  Arneill: Clinical Diagnosis and Urinalysis, 90.
  Ashhurst: Surgery. Its Principles and Practice, 187.
  Auerbach: Headache, 30.

  Bacon: A Manual of Otology, 29.
  Bailey: A Text-Book of Histology, 88.
  Ballenger: Genitourinary Diseases and Syphilis, 87.
  Barnes: The Tonsils, 390.
  Bastedo: Materia Medica, Pharmacology Therapeutics, and Prescription Writing, 58.
  Baum and Moyer: Skin and Venereal Diseases, 88.
  Beard: Ophthalmic Surgery, 187.
  Bergey: Principles of Hygiene, 188.
  Billings and Salisbury: General Medicine, 60, 358.
  Bishop: Arteriosclerosis, 220.
  Braun: Local Anesthesia, 322.
  Brill: Psychanalysis; Its Theories and Practical Applications, 290.
  Brown: The Junior Nurse, 153.
  Bryan: Principles of Surgery, 87.
  Burr: A Handbook of Psychology and Mental Diseases, 324.

  Cables: Golden Rules of Diagnosis and Treatment, 90.
  Cattell: Medical Research and Education, 30.
  Cheyne and Burghard: A Manual of Surgical Treatment, Vol. V, 30.
  Cline-Riviere: The Early Diagnosis of Tubercle, 290.
  Councilman: Disease and its Causes, 290.
  Cowan: Diseases of the Heart, 220.
  Crile: Anoci-Association, 321.
  Cunningham: Text-Book of Anatomy, 86.

  Da Costa: Modern Surgery, 219.
  Davis: Development and Anatomy of the Nasal Accessory Sinuses in Man, 153.
  Davis: Manual of Obstetrics, 358.
  Delafield and Prudden: A Text-Book of Pathology, 392.
  De Lee: Obstetrics for Nurses, 188.
  Dorland's American Illustrated Medical Dictionary, 187.
  Dudley: The Principles and Practice of Gynecology, 60.
  Dudley and Stowe: Gynecology, 358.

  Eggleston: Essentials of Prescription Writing, 90.
  Ely: Diseases of Bones and Joints, 322.

  Finzi: Radium Therapeutics, 222.
  Fox: The Principles of Practice of Medical Hydrology, 90.
  Frauenthal: A Manual of Infantile Paralysis, 187.
  Friedenwald: Diet in Health and Disease, 58.

  Garrison: History of Medicine, 59.
  Gibson: A Handbook for the Postmortem Room, 188.
  Goepp: State Board Questions and Answers, 222.
  Goodman: Blood Pressure in Medicine and Surgery, 255.
  Gray: Anatomy, Descriptive and Applied, 29.

  Hare: Diagnosis in the Office and at the Bedside, 222.
  Hare: Practical Therapeutics, 356.
  Harrington: A Manual of Practical Hygiene, 357.
  Harris: Motherhood, 392.
  Hartenberg: Treatment of Neurasthenia, 221.
  Hecker: Pyorrhea Alveolaris, 87.
  Henson: Malaria, 60.
  Hoyt: Practical Therapeutics, 255.

  International Clinics, Vol. IV, 1913, 59; Vol. I, 1914, 153.
  International Medical Annual, 188.

  Jackson: The Ready Reference Handbook of Diseases of the Skin, 256.

  Kaplan: Serology and Nervous Diseases, 392.
  Kelly: Local American Botanists, 256.
  Kerley: The Practice of Pediatrics, 256.
  Knowles: Diseases of the Skin, 322.

  Landolt: Defective Ocular Movements and their Diagnosis, 154.
  Legarde: Gunshot Injuries, 390.
  Little: Anatomy and Physiology, 324.
  Lynch: Diseases of the Rectum and Colon, 255.

  Macdonald: The Practitioner's Practical Prescriber, 90.
  Makins: Surgical Experiences in South Africa, 30.
  Mallory: The Principles of Pathologic Histology, 153.
  Manton: Obstetrics, 90.
  May: Manual of Diseases of the Eye, 322.
  Morse: Case Histories in Pediatrics, 59.
  Mosby: Causes and Cures of Crime, 60.
  Mumford: The Practice of Surgery, 389.
  Murphy: General Surgery, 60, 256, 290.
  Murphy: Surgical Clinics, Vol. II, No. 4, 88; Vol. III, No. 1, 188; Vol. III, No. 2, 222; Vol. III, No. 3, 324; Vol. III, No. 4, 391; Vol. III. No. 5, 391.
  Musser: A Practical Treatise on Medical Diagnosis, 88.
  Myers: The Care of Children, 30.
  Nagel: Nervous and Mental Diseases, 392.
  Naseher: Geriatrics, 357.
  Neef: Guiding Principles in Surgical Practice, 324.
  Newcomet: Radium and Radiotherapy, 390.
  Newmayer: The Medical and Sanitary Inspection of Schools, 87.
  Nutt: Diseases and Deformities of the Foot, 60.

  Ortner: Treatment of Internal Diseases, 29.
  Osler: Essays, 187.
  Osler and McCrae: Modern Medicine, Vol. I, 87; Vol. II, 185; Vol. III, 254.

  Parke Davis & Co.: A Manual of Biological Therapeutics, 358.
  Practitioner's Visiting List, 392.
  Pritchard: Practical Prescribing, 90.
  Progressive Medicine: Vol. XV, No. 4, 1913, 88; Vol. XVI, No. 2, 324; Vol. XVI, No. 3, 391.

  Robinson: The Treatment of Sexual Impotence, 29.
  Rogers: Dysenteries, 60.

  Sadler: Worry and Nervousness, 390.
  Simon: A Manual of Chemical Diagnosis, 186.
  Smallwood: A Text-Book of Biology, 29.
  State Board Examinations of the United States and Canada, 222.
  Stedman: A Reference Handbook of the Medical Sciences, Vol. III, 152.
  Stelwagon: Treatise on Diseases of the Skin, 152.
  Stenhouse: Pathology, General and Special, 88.
  Sturridge: Dental Electro-Therapeutics, 324.

  The Physician's Visiting List for 1915, 392.
  Thomson: A Treatise on Clinical Medicine, 356.
  Thomson and Niles: Manual of Surgery, Vol. III, 154.
  Tibbles: Dietetics, 389.
  Tuley: An Epitome of Pediatrics, 390.

  Vaughan: The Protein Split Products in Relation to Immunity and Disease, 59.

  Wechselmann: The Pathogenesis of Salvarsan Fatalities, 186.
  White: The Pathology of Growth, Tumors, 90.
  Wood and Andrews: Eye, Ear, Nose and Throat, 392.
  Wrench: The Healthy Marriage, 154.
  Wright: A History of Laryngology and Rhinology, 188.
  Wright and Smith: A Text-Book of the Diseases of the Nose and Throat, 358.

Brown, J. R., Causation and Prevention of Goitre, 369.
Cancer Control, Precancerous Lesions, 111.
Cancer of the Breast, 176.
Cancer of the Lower Lip, A Plea for Early Operation for, 1.
Cardiac Arrhythmia-Ectopic Systole, Graphic Studies in, 338.
Cassiday, F. F., The Use of Colored Lenses to Cut Down Heat Radiation and Neutralize Ultra-Violet and Infra-Red Light Rays, 282.
Chappell, Frank, Emergency Incubator, 24.
Closson, G. L., Ether Anesthesia, 261.
Club-Foot, Success in Treatment of Congenital, 31.
Coffen, T. H., Digitalis Heart Block, 334.

Cole, C. M., Mycosis Fungoides, 79.
Colored Lenses to Cut Down Heat Radiation and Neutralize Ultra-Violet and Infra-Red Light Rays, The Use of, 282.
Connolly, J. M., An Improved Ureometer for Clinical Use, 284.

Correspondence.

- Autoserotherapy, 341.
- Comments on the Sixty-fifth Annual Session of the American Medical Association, 252.
- Radio-Activity of Hot Springs, 385.

Cricbtlow, J. F., The Evolution of Medicine, 325.
Crushing Injuries of the Extremities. 76.
Cunningham, A. T. R., Jacksonian Epilepsy with Reference to its Surgical Treatment, 279.
Cystoscope, Why the, 51.

Digitalis Heart Block, 334.
Duodenum, Kinking at the First and Second Portions of the, Considered as a Clinical Entity, 43.

Eastern Surgical Clinics, Impressions Received from a Visit to Some, 246.
Eaton, C. E., The Internal Secretion of the Sexual Glands, 212.

Editorial.

- New Year Greetings, 25.
- A Preventable Typhoid Epidemic, 25.
- The Menace from Plague, 26.
- Another Scheme to Soak the Doctors, 54.
- Evolution of the Practice of Medicine, 54.
- What Constitutes a Legal Practitioner in Washington, 55.
- Hospital Associations in Washington, 82.
- The Physician of the Future, 82.
- The Legal Practitioner and the Washington Industrial Commission, 114.
- Important Features of the Recent Conference of State Secretaries, 114.
- Relief from the Burden of the State Insane, 115.
- Forgery under the Medical Practice Act, 116.
- The Annual Meeting of the Pacific Coast Oto-Ophthalmological Society, 116.
- Abolition of the Saloon in Oregon and Washington, 147.
- The Child Welfare Exhibit in Seattle, 147.
- The Medicolegal Bureau of the American Medical Association, 147.
- Changes in Our Journal, 148.
- Dr. C. J. Smith as Governor of Oregon, 180.
- The 1915 Meeting of the American Medical Association in Seattle, 180.
- The Need of Accurate Vital Statistics, 181.
- The Most Healthful Section of the United States, 181.
- An Impetus for the Production of Pure Milk, 182.
- Annual Reports of the A. M. A. Clinical Laboratory, 182.
- Next Month's Meeting of the Pacific Coast Oto-Ophthalmological Society, 182.
- Shall the American Medical Association be Permanently Located in the Capital of the Nation? 214.
- High Surgical Standards, 214.
- Medical Practice Act Sustained, 215.
- The Seattle School Clinic, 215.
- The National Association for the Prevention and Relief of Tuberculosis, 215.
- Meeting of the Pacific Coast Oto-Ophthalmological Society, 249.
- Annual Meeting of the Oregon Association, 249.
- Next Month's Meeting at North Yakima, 249.
- Activities of the Washington Examining Board, 250.
- Another State Association Journal, 250.
- This Month's Meeting at Portland, 285.
- Washington Association at North Yakima, 286.
- Annual Meeting of Utah Medical Association, 286.
- Reduced Fares to Association Meeting, 287.
- Last Month's Portland Meeting, 312.
- The Washington Meeting at North Yakima, 312.
- The Idaho State Meeting at Boise, 313.
- The Washington Medical Defense Department, 313.
- An Effective Means of Suppressing the Quack, 314.
- Kill Initiative Measure No., 315.
- Dr. C. J. Smith's Gubernatorial Campaign, 315.
- Last Month's Boise Meeting, 343.
- Medicine Made in America, 343.
- Alcohol Prohibited in Oregon and Washington, 382.
- The Doctors and First Aid in Washington, 382.
- Our Relations to Our Advertisers, 383.
- Professional Advertising, 343.
- Professional Cards, 383.

Electrotherapeutics, A Summary of, 73.
Empyema, Decortication of the Lung for Old, 68.
Epplen, Frederick, Discussion of Some of the Problems of Gastric Diagnosis, 194. The Principles of Medical Treatment of Goitre, 377.
Expert Testimony and Malpractice Suits, 242.
Eye, Ear, Nose and Throat, The Interrelation between Systemic Diseases and Diseases of the, 65.
Eyes, Affections of the, Caused by Sinus Infection, 244.

Facts About Certain Remedies, 388.
Fassett, F. J., Cardinal Principles in the Management of Bone Tuberculosis, 35.
Fractures of the Neck of the Femur. The Extension Treatment of, in Reference to its Occurrence in Elderly Subjects, 303.
Fractures of the Pelvis with Report of Cases, 159.
Fractures of the Upper End of the Humerus, A Useful Splint for, 164.

Garton, A. C., Treatment of Asiatic Cholera at San Lazaro Hospital, 178.
Gastric Diagnosis, Discussion of Some of the Problems of, 194.
Gastroenterostomy under Local Anesthesia, with Report of a Case, 80.
Geary, H. L., Nitrous Oxid and Oxygen Anesthesia, 264.
Goitre, Causation and Prevention of, 869.
Goitre, Prevalence and Distribution of in Washington, 371.
Goitre, Medical Treatment of, 375.
Goitre, The Prevalence of in the Northwest Based on the Examination of 3339 Students Entering the University of Washington, 189.
Goitre, The Principles of Medical Treatment of, 377.
Goitre, Treatment of, 373.
Green, F. R., Modern Medicine and Its Social Responsibility, 359.
Greene, R. A., Plaut Vincent's Angina, with Report of Five Cases Treated with Salvarsan, 50.

Hall, D. C., The Prevalence of Goitre in the Northwest, Based on the Examination of 3339 Students Entering the University of Washington, 189; Prevalence and Distribution of Goitre in Washington, 371.
Health Department, The Local, 171.
Hernia, Sliding, 294.
House, William, Recoverability of the Insane, 121.
Hudgel, C. R., Report of a Case of Trachoma Treated with Bacillus Lactis Bulgaricus, 340.

Incubator, Emergency, 24.
Insane in Washington Territory, The, 91.
Insane, Recoverability of the, 121.
Iodin in Emergency Wounds, Use of, 78.

Jacksonian Epilepsy with Reference to its Surgical Treatment, 279.
Jones, E. O., The Value of Nerve Blocking in the Prevention of Surgical Shock, 298.
Jones, N. W., Kinking at the First and Second Portions of the Duodenum, Considered as a Clinical Entity, 43; Some Phases of Chronic Membranous Pericolitis, 94.
Joyce, R. S., Crushing Injuries of the Extremities, 76.
Joyce, T. M., Treatment of Goitre, 373.

Kelley, E. R., The Physician and the Public Health, 363.

Laurence, E. J., Impassable Contraction of the Gravid Uterus. Report of a Case Verified by Cesarean Section. Dilatation of Stomach. Recovery, 169.
Lensman, A. P., The Interrelation Between Systemic Diseases and Diseases of the Eye, Ear, Nose and Throat, 65.
Levy, Robert, Diagnosis and Indications for Treatment of Suppurating Diseases of the Nasal Accessory Sinuses, 61.
Lynch, C. J., Problems of the Washington Profession, 291.

Mackenzie, K. A. J., Personal Experience with Radium in the Treatment of Cancer and other Morbid Growths, 257.
Manning, J. B., Appendicitis in Childhood, 307.
Mason, J. T., A New Hand-Driven Circular Bone Saw, Including a Flexible Shaft that can be Adapted to Various Usages, 142; Impressions Received from a Visit to Some Eastern Surgical Clinics, 246.
Matson, R. C., Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis, 229; The Treatment of Pulmonary Tuberculosis by Means of Artificial Pneumothorax, 10.
Matthews, A. A., Perforating Duodenal Ulcer with Reference to Pain in Left Shoulder as a Symptom, 97.
Maxey, E. E., Medical Defense by the State Association, 145.
McBride, J. S., Political and Economical Aspects of Municipal Sanitation, 366.
McClure, C. R., Sacroiliac Traumatisms, 155; Success in the Treatment of Congenital Club-Foot, 31.
McCool, J. L., Conservation of Vision, 301.
Medical Defense by the State Association, 145.
Medical Inspection of Public Schools, 174.
Medical Notes 26, 55, 83, 116, 148, 183, 216, 250, 287, 315, 344, 384.
Medicine, The Evolution of, 325.
Medicine, Modern, and Its Social Responsibility, 359.
Milk, A Fermented Medicinal, 209.
Mitchell, F. W., Legal Relations Between Surgeon and Patient, 330.
Montague, E. A., Medical Inspection of Public Schools, 174.
Mycosis Fungoides, 79.
Myers, Edmund, A Summary of Electrotherapeutics, 73; Report of a Case of Beri-Beri, 284.

Nasal Accessory Sinuses, Diagnosis and Indications for Treatment of Suppurating Diseases of the, 61.
Nephritis, Recent Observations in, 101.
Nerve Blocking in the Prevention of Surgical Shock, The Value of, 298.
Nicholson, D. A., Report of a Case of Status Epilepticus Cured by Decompression Operation, 140.
Null, M. M., Gastroenterostomy Under Local Anesthesia with Report of a Case, 80.
Obstetrical Practice Covering 2108 Cases Without Maternal Mortality, A Few Conclusions Reached after Twenty Years of, 165.
Orthopedic Principles to General Surgery, The Application of Several, 239.

Obituary.

- Acton, Y. J., 317.
- Appleby, Winston, 117.
- Barber, S. J., 345.
- Campbell, G. B., 56.
- Cunningham, W. B., 288.
- Dean, T. J., 217.

MAR 12 1915

89899

Obituary—Continued.
Dillon, P. F., 288.
Fink, Robert, 27.
Frecman, R. T., 288.
Gooding, W. P., 317.
Hamilton, Salathiel, 84.
Heglar, A. L., 288.
Hemenway, Stacey, 118.
Hinmers, G. F., 317.
Hughes, Marietta, 184.
Hurlbut, J. F., 118.
Jones, H. M., 345.
Linklater, S. T., 84.
McCully, Alex, 385.
Munsell, E. G., 184.
Neagle, J. H., 184.
Redon, L. H., 184.
Rigshy, D. T., 85.
Roark, B. H., 217.
Rohson, C. E., 56.
Ross, R. R., 27.
Russell, John, 288.
Semlor, P. J., 345.
Shipp, E. M., 217.
Short, F. A., 27.
Sinks, J. R., 56.
Smith, R. L., 317.
Stayt, C. B., 385.
Willoughhy, R. L., 85.
Wilson, J. G., 317.

Paul, S. G., The Local Health Department, 171.
Peacock, A. H., A Study of Twenty Cases of Renal Tuberculosis, 205.
Pennock, W. J., Chronic Pyelitis, 202.
Pericolitis, Some Phases of Chronic Membranous, 94.
Pettit, J. A., The Extension Treatment of Fractures of the Neck of the Femur in Reference to its Occurrence in Elderly Subjects, 307.
Pierce, E. A., Autoserotherapy, 223.
Pottenger, F. M., Some Practical Points in the Diagnosis of Active Tuberculosis, 6.
Problems of the Washington Profession, 291.
Proctoclysis in Postoperative Treatment, Sugar Solution by, 273.
Prosch, T. W., The Insane in Washington Territory, 91.
Psychic Mind in Medicine, The, 125.
Public Health, the Physician and the, 363.
Pugh, W. N., The Psychic Mind in Medicine, 125.
Pyelitis, Chronic, 202.
Radium in the Treatment of Cancer and other Morbid Growths, Personal Experience with, 257.

Reports of Society Meetings.
Alumni Association of the Medical Department of the University of Oregon, 218.
Chehalis County Medical Society, 57.
Clallam County Medical Society, 150, 219, 288.
Eastern Oregon District Medical Society, 218.
Idaho State Medical Association, 352.
King County Medical Society, 28, 57, 85, 118, 150, 185, 219, 319, 355, 387.
Lewis County Medical Society, 151.
Oregon State Medical Association, 317.
Portland City and County Medical Society, 27, 56, 85, 149, 355, 386.
Puget Sound Academy of Ophthalmology and Otolaryngology, 28, 58, 86, 118, 151, 319, 355.
South Idaho District Medical Society, 152.
Southern Oregon Medical Society, 184.
Stevens County Medical Society, 57.
Umatilla County Medical Society, 337.
Utah State Medical Association, 345.
Whatcom County Medical Society, 57, 86.

Rich, E. A., The Application of Several Orthopedic Principles to General Surgery, 237.
Rich, E. I., A Few Conclusions Reached After Twenty Years Obstetrical Practice Covering 2108 Cases Without Maternal Mortality, 165.
Richards, G. G., Recent Observations in Nephritis, 101.
Rockey, Paul, Sliding Hernia, 294.
Sabin, C. G., Fractures of the Pelvis with Report of Cases, 159.
Sacroiliac Traumatisms, 155.
Sanitation, Political and Economic Aspects of Municipal, 366.
Scoliosis, 38.
Seaman, Clayton, Affections of the Eyes Caused by Sinus Infection, 244.
Semple, J. M., Expert Testimony and Malpractice Suits, 242.
Sexual Glands, The Internal Secretions of the, 212.
Sharples, C. W., Medical Treatment of Goitre, 375.
Shaw, H. A., A New Hand-Driven Circular Bone Saw, Including a Flexible Shaft that can be Adapted to Various Uses, 142.
Speidel, W. C., Direct Transfusion of Blood with Special Reference to its Use in Pernicious Anemia, 136.
States, R. W., Surgical Problems of the Country Physician, 108.
Status Epilepticus Cured by Decompression Operation, Report of a Case of, 140.
Stearns, R. W., Blood-Pressure Readings in General Practice, 185.
Stomach Troubles, Further Remarks on the Diagnosis of Chronic, 48.
Surgeon and Patient, Legal Relations Between, 330.
Surgical Problems of the Country Physician, 108.

Tallman, M. H., Graphic Studies in Cardiac Arrhythmia-Ectopic Systole, 338.
Tape, G. W., Radioactivity of Hot Springs, 385.
Thompson, H. B., A Useful Splint for Fracture of the Upper End of the Humerus, 164.
Thyng, D. K., Use of Iodin in Emergency Wounds, 78.
Tilzer, A. A., A Fermented Medicinal Milk, 209.
Torland, Torleif, Local Anesthesia, 267.
Trachoma Treated with Bacillus Lactis Bulgaricus, Report of a Case, 340.
Transfusion of Blood, Direct, with Special Reference to its Use in Pernicious Anemia, 136.
Tuberculosis, A Study of Twenty Cases of Renal, 205.
Tuberculosis, Artificial Pneumothorax in the Treatment of Pulmonary, 229.
Tuberculosis, Cardinal Principles in the Management of Bone, 55.
Tuberculosis, Diagnosis in the Early Stages of Urinary, 310.
Tuberculosis, Gynecologic, 21.
Tuberculosis, Some Practical Points in the Diagnosis of Active, 6.
Tuberculosis, The Relation of Temperature to Incipient, 237.
Tuberculosis, Treatment of Pulmonary, by Means of Artificial Pneumothorax, 10.
Tuberculous Peritonitis, 16.
Tucker, E. F., Relation of the X-Ray Specialist to the Medical Profession, 112.

Ulcer, Perforating Duodenal, with Reference to Pain in Left Shoulder as a Symptom, 97.
Ureometer for Clinical Use, An Improved, 284.
Urobilin in the Urine, 130.
Uterus, Impassable Contraction of the Gravid, Report of One Case Verified by Cesarean Section. Dilatation of Stomach. Recovery, 284.

Vincent's Angina, Plaut, with a Report of Five Cases Treated with Salvarsan, 50.
Vision, Conservation of, 301.

Welty, E. M., Gynecologic Tuberculosis, 21.
Whiteside, G. S., Diagnosis in the Early Stages of Urinary Tuberculosis, 310.
Winslow, Kenelm, Further Remarks in the Diagnosis of Stomach Troubles, 48.
Würdemann, H. V., Comments on the Sixty-fifth Annual Session of the American Medical Association, 252.

X-Ray Specialist to the Medical Profession, Relation of the, 112.

CONTRIBUTORS TO VOLUME VI. (New Series)

Aird, J. W., Provo, Utah, (176).
Alley, J. N., Lapwai, Ida., (237).

Baar, Gustav, Portland, Ore., (130).
Baldwin, C. S., Salt Lake City, Utah, (38).
Barbee, C. M., Portland, Ore., (273).
Beckman, E. H., Rochester, Minn., (1), (68).
Behle, A. C., Salt Lake City, Utah, (16).
Besson, John, Portland, Ore., (51), (341).
Bloodgood, J. C., Baltimore, Md., (111).
Brown, J. R., Tacoma, Wash., (369).

Casseday, F. F., Portland, Ore., (282).
Chappell, Frank, Granite Falls, Wash., (24).
Closson, G. L., Seattle, Wash., (261).
Coffen, T. H., Portland, Ore., (334).
Cole, C. M., Caldwell, Ida., (79).
Connolly, J. M., Portland, Ore., (284).
Critchlow, J. F., Salt Lake City, Utah, (325).
Cunningham, A. T. R., Spokane, Wash., (279).

Eaton, C. E., Seattle, Wash., (212).
Epplen, Frederick, Spokane, Wash., (194), (377).

Fassett, F. J., Seattle, Wash., (35).

Garton, A. C., Manila, P. I., (178).
Geary, H. L., Seattle, Wash., (264).
Green, F. R., Chicago, Ill., (359).
Greene, R. A., Spokane, Wash., (50).

Hall, D. C., Seattle, Wash., (189), (373).
House, William, Portland, Ore., (121).
Hudgel, C. R., Boise, Ida., (340).

Jones, E. O., Seattle, Wash., (298).
Jones, N. W., Portland, Ore., (43), (94).
Joyce, R. S., Ogden, Utah, (76).
Joyce, T. M., Portland, Ore., (375).

Kelley, E. R., Seattle, Wash., (363).

Laurence, E. J., Spokane, Wash., (169).
Lensman, A. P., Seattle, Wash., (65).
Levy, Robert, Denver, Col., (61).
Lynch, C. J., North Yakima, Wash., (291).

Mackenzie, K. A. J., Portland, Ore., (257).
Manning, J. B., Seattle, Wash., (307).
Mason, J. T., Seattle, Wash., (142). (246).
Matthews, A. A., Spokane, Wash., (97).
Mattson, R. C., Portland, Ore., (10), (229).
Maxey, E. E., Boise, Ida., (145).
McBride, J. S., Seattle, Wash., (306).
McClure, C. R., Portland, Ore., (31), (155).
McCool, J. L., Portland, Ore., (301).
Mitchell, F. W., Blackfoot, Ida., (330).
Montague, E. A., Tacoma, Wash., (174).
Myers, Edmond, Portland, Ore., (73), (284).

Nicholson, D. A., Seattle, Wash., (140).
Null, M. M., Seattle, Wash., (80).

Peacock, A. H., Seattle, Wash., (205).
Pennock, W. J., Spokane, Wash., (202).
Pettit, J. A., Portland, Ore., (303).
Pierce, E. A., Portland, Ore., (223).
Pottenger, F. M., Monrovia, Cal., (6).
Prosch, T. W., Seattle, Wash., (91).
Pugh, W. N., Salt Lake City, Utah, (125).

Rich, E. A., Tacoma, Wash., (239).
Rich, E. I., Ogden, Utah, (165).
Richards, G. G., Salt Lake City, Utah, (101).
Rockey, Paul, Portland, Ore., (294).

Sabin, C. G., Portland, Ore., (159).
Seaman, Clayton, Portland, Ore., (244).
Semple, J. M., Spokane, Wash., (242).
Sharples, C. W., Seattle, Wash., (377).
Shaw, H. A., Seattle, Wash., (142).
Speidel, W. C., Seattle, Wash., (136).
States, G. W., Preston, Ida., (108).
Stearns, R. W., Medford, Ore., (105).

Tallman, M. H., Boise, Ida., (338).
Thompson, H. B., Seattle, Wash., (164).
Thyng, D. K., Tacoma, Wash., (78).
Tilzer, A., Portland, Ore., (209).
Torland, Torleif, Seattle, Wash., (267).
Tucker, E. F., Portland, Ore., (42).

Welty, E. M., Spokane, Wash., (21).
Whiteside, G. S., Portland, Ore., (310).
Winslow, Kenelm, Seattle, Wash., (48).
Würdemann, H. V., Seattle, Wash., (252).

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ORIGINAL CONTRIBUTIONS.

A PLEA FOR EARLY OPERATION FOR CANCER OF THE LOWER LIP.*

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In discussing the subject of cancer one must necessarily take into consideration our present knowledge concerning its etiology and growth and the various attempts which have been made from time to time to cure the disease or to prevent its dissemination throughout the body. In spite of the conscientious work of hundreds of trained pathologists and bacteriologists and the multitude of reports which these men have given to the world with regard to the etiology of cancer, the cause of the disease is still unknown. However, as a result of the labor of these observers much data have been given concerning the growth and dissemination of cancer. These data have been of the utmost importance in governing the methods of treatment of cancer and in developing means for its control and cure. The fact that the cause of the disease is unknown has not stopped attempts to cure it or prevented great progress in this direction.

A study of the pathology of cancer indicates that there must be a period in its growth when it is limited to an extremely small group of cells in some part of the body and while still so confined can be cured by complete removal of this diseased area. We have also learned that cancer is disseminated throughout the body in almost every instance by metastasis along the lymphatic channels which drain the affected area, although there is evidence to show that dissemination may take place through the blood in certain cases. Cancer may also be engrafted from one part of a cancerous subject to another by direct transplantation of the cancer-cells, but no instances are on record of a cancer having been transplanted from one subject to another.

In the abdomen cancer-cells appear to become separated from the primary growth and transplanted to other parts of the peritoneal cavity. The early involvement in the pelvis in certain cases of cancer of the stomach can be explained in no other way. The diffuse involvement of the entire abdominal cavity following the rupture of a malignant ovarian cyst is another example of this process. These facts, while important and an aid in curing cancer, do not teach us anything concerning its origin.

Williams[1], who has written extensively on this subject, believes that chronic irritation has no influence on the production of cancer. Other observers of equal standing believe that chronic or prolonged irritation is one of the important factors in the production of the disease. Cancers originating on the surface of the body never occur except at points subjected to continuous irritation over a considerable length of time. All physicians are familiar with the type which develops on a crack or ulcer of the lip, about a mole, a sebaceous cyst, in an ulcer or the scars resulting from burns. There is evidence also to show that cancers inside the body always develop in tissues subjected to prolonged irritation. The stomach, with its acid content and the continuous irritation which it receives from large, coarse particles of food, as well as the fact that it is nearly always overworked, is one of the most frequent situations for cancer. The large intestine, which also contains coarse dried particles of feces and in addition has a high bacterial content, is frequently the site of the primary lesion. The small intestine, which is always practically empty and when filled contains only liquids of a slightly alkaline or neutral reaction and a comparatively low bacterial content, is in direct contrast with the stomach and large intestine relative to the frequency of primary cancer. The one fact which seems to stand out above all others is that factors, such as tumors, ulcers, etc., which produce or aid irritation, are often the primary site of cancer.

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*Read before the Thirty-ninth Annual Meeting of Oregon State Medical Association, Medford, Ore., Sept. 18-19, 1913.

Cancer seems to be on the increase; if not on the increase, it certainly is true that more cases are being diagnosed than formerly and larger numbers are being reported to the various health authorities. Because we are in ignorance of the etiology and have no means of preventing the disease certainly does not prevent us from curing it in the early stages. Our only hope lies in the dissemination of knowledge which we have regarding its development and in this way teaching the public to come earlier for observation in any suspected case.

Our present knowledge concerning the cure of cancer is relatively as follows: The most enthusiastic internists are willing to admit that there is no medical cure. Paste containing arsenic is one of the oldest methods of treatment. These pastes have no selective action for cancer but do have some affinity for pathologic tissues, probably because such tissues contain more water and have less vitality than normal tissues. We know that paste can simply eat out a localized area where it is applied, but cannot possibly have any effect after the growth has left the primary focus.

The Röntgen-ray, after years of application in cancer, has not given the results which were hoped for it. It has no direct effect except that it stimulates the formation of fibrous tissue and in this way delays the growth. Radium is still in the experimental stage as regards treatment. Its effect is probably similar to that of the Röntgen-ray. It has no effect on a growth situated on the mucous membrane.

If applied with intelligence in the early stages of cancer, surgery nearly always produces a cure. Late surgery simply delays. In considering surgery as a treatment, the essence of cure is time, if other factors are equal. The public should be educated in regard to these facts and it should be impressed upon the people at every opportunity that it is the disease and not the treatment which is dangerous. The danger comes not from operation, but from delayed operation.

In order that cancer may be cured by surgical measures, the lesion must be situated so that an early diagnosis is possible. It must also be situated so that the growth itself can be removed with a wide margin and the lymphatics into which this area drains should be accessible for removal at the primary operation. Cancer of the lower lip is ideally situated to conform to these points. In addition, they are usually slow-growing with but slight tendency to form metastasis in distant parts of the body. The chain of lymphatics about the neck is so abundant and guards this area so well that it is only on rare occasions that a metastasis is allowed to occur beyond them. In these cases the patient is aware of a lump, an ulcer or a crack which does not heal and medical advice is sought. While a correct diagnosis can be made in most instances by observation, the only absolute proof is a microscopic examination by a competent pathologist.

Too many cancers of the lower lip are regarded as specific ulcers by the physician and valuable time is sacrificed in trying out the effect of potassium iodid. It should be remembered that a syphilitic ulcer of the lower lip is an extremely rare condition and that cancer is exceedingly common. Any physician in America, no matter how isolated he may be, can send a specimen to a pathologist and get a telegraphic report within a few days. Only when we come to realize the importance of an early diagnosis will we appreciate the necessity of a correct pathologic diagnosis. The important factor in these cases is time and in almost every instance the patient can be cured if the diagnosis be made early. The only cases which are hopeless are those patients who have delayed so long that an operation is no longer advisable.

The area of drainage of the lower lip is so well established and has been so carefully studied by competent observers (Poirier, Cuneo, Küttner) that one knows definitely the lymph nodes which are first affected after the cancer has progressed beyond a local disease. The submental glands, lying in a triangle bounded by the anterior bellies of the digastric muscles and the hyoid bone, drain the central portion of the lower lip. The submaxillary glands, which lie in the submaxillary triangle, bounded by the digastric muscle and the ramus of the lower jaw, drain the remainder of the lower lip as well as the anterior portion of the cheek. These triangles drain the entire lower lip and, if the glands are removed early, a complete block between the primary focus of the disease and the remainder of the body is effectually established. It sometimes happens that the submaxillary lymphatics on the side opposite the cancer become involved. While this occurs but rarely, one should remember that when the regular lymphatic channels are blocked, whether by cancer or inflammation, the lymphatic stream may flow in any direction, similar to the blood being taken up by the collateral circulation when the main trunk of a vessel is ligated. Thus it is necessary in every case to remove the lymphatics on each side at the primary operation. This should include the submaxillary salivary glands also, not because they become involved by the cancer but because it is impossible to thoroughly remove the lymph nodes and leave the submaxillary salivary glands.

After the glands from one side have been removed, they should be examined microscopically at once and if involved with cancer the dissection should be carried down that side of the neck. This is the so-called "block dissection" and is best done by including the sternomastoid muscle which allows better exposure and enables one to do a more thorough dissection. The dissection should include all of the glands and gland-bearing fascia of the entire neck, including the anterior and posterior deep jugular glands. Butlin[2] pointed out the importance of the area underneath the sternomastoid muscle and posterior to the submaxillary triangle, actually the posterior part of the submaxillary triangle, lying near the mastoid portion of the temporal bone. This is a point at which glandular recurrence following operations for cancer of the lower lip frequently takes place and which may be overlooked in making the dissection.

The principle underlying the cure of cancer of the lower lip is the same as that involving the cure of cancer in any other part of the body, that is, the primary growth along with the glands into which the area of the growth drains must be thoroughly removed at the earliest stage possible. The medical profession too long have assumed that cancer of the lower lip is not as malignant as cancers in other parts of the body and have contented themselves with conservative measures when radical surgery was imperative. A physician who is not competent to do a thorough dissection of the neck is not fitted to treat a cancer of the lower lip.

There is one differentiation to be made between cancer of the lower lip and that in other parts of the body. A cancer of the lower lip is either a local growth or a metastasis in the adjacent glands. I have never observed a cancer occurring in the lymphatic vessels between the original growth and the lymphatics of the neck; consequently, it does not seem necessary to remove these vessels along with the glands and the primary growth. This is fortunate for both the patient and the surgeon, because it lessens the danger of infection from the mouth into the deep tissues of the neck. The original growth, however, should be removed with a wide margin, the wider the better.

In cases where only the submaxillary and submental regions have been dissected, infection is not of serious consequence since the mouth may often be entered in these dissections, and also because infection occasionally takes place from the mouth through the cut duct of the submaxillary salivary (Wharton's) gland. In cases where the dissection must extend along the jugular vein to the clavicle, we prefer to perform the operation in two stages in order to lessen the danger of infecting the entire deep tissue of the neck. The extensive skin flaps which are necessary in the block dissection heal very satisfactorily but, if infected from the mouth, the fascia has a tendency to slough and convalescence is delayed materially.

Our customary procedure in operating for cancer of the lower lip is illustrated by Figures 1 ,2, 3. An incision is made three-fourths inch below the ramus of the jaw from one sternomastoid muscle to the other. This incision extends through the skin and platysma muscle and is made low in order to avoid the small branch of the facial nerves which swings down below the angle of the jaw and then returns on the face to supply the muscles about the angle of the mouth. When it is necessary to remove only a small portion of the middle of the lip, a better cosmetic result is obtained by saving these branches of the facial nerves. If, however, it be necessary to remove more of the lower lip and widen the mouth by extending into the cheek it is not necessary to save these nerves. Through this incision the skin and platysma muscle are reflected down to the hyoid bone and up to the inferior maxilla.

All of the fascia and fat, including the submaxillary salivary glands, are removed from the submental and submaxillary triangles (Fig. 1). It is necessary to ligate both the facial artery and vein. The blood supply to the face is so abundant through the other branches of the external carotid that sloughing will not occur from this cause. The hypoglossal nerve and the lingual branch of the trifacial are exposed on each side and should be saved. After the removal of the glands this primary incision is closed, drainage being established through small separate incisions on either side. The platysma muscle is stitched first and then the skin with a subcutaneous suture. The wound in the neck is

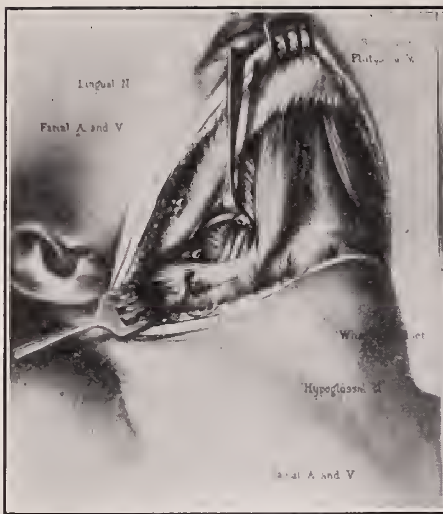

Fig. 1. Dissection of submental and submaxillary triangles for epithelioma of the lower lip.

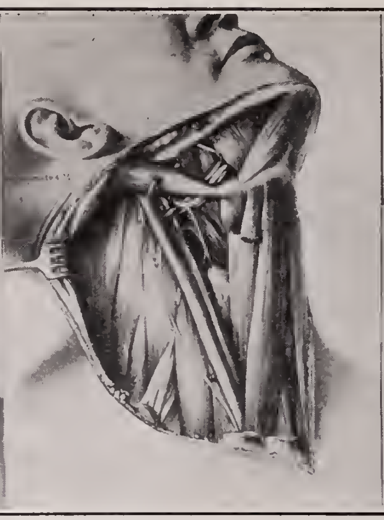

Fig. 2. Block dissection, with removal of sternomastoid muscle, employed when submaxillary glands are carcinomatous.

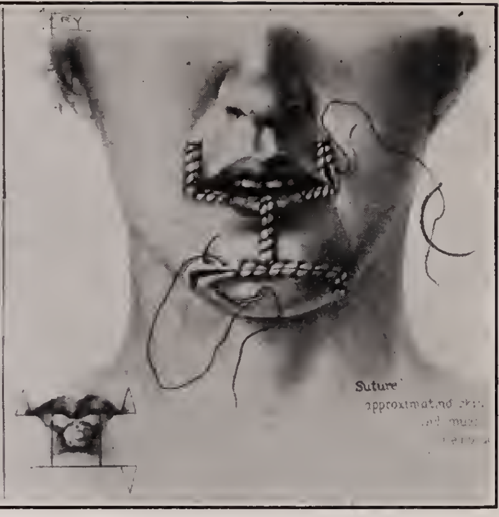

Fig. 3. Illustrating plastic operation for removal of a portion or the entire lower lip for cancer.

carefully protected and the operation on the lip begun. (Fig. 2).

A quadrilateral section, including the full thickness of the entire lip, is removed, running down nearly to the point of the chin. The section removed should include the growth and from one-fourth to one-half inch on either side into the healthy tissues. The coronary artery should be tied on either side. An incision is then made from the lower angle of the quadrilateral, parallel to the ramus of the jaw on either side as far as is necessary to obtain enough tissue to close the defect. The entire flap from which the new lower lip is to be made should be freed well from the bone. These flaps are sutured together in the midline with silkworm gut sutures, the skin being approximated with horse-hair. If the skin remaining over the point of the chin be so long when approximated to the new lip that it produces wrinkles, it is shortened by taking out a small triangle at one or both ends of the incision. This is the technic employed in cases where only a small portion of the lip is removed. (Fig. 3.)

If it be necessary to remove one-half or more of the lower lip, the primary incision is made in precisely the same manner. In addition to the incision running from the lower end of the quadrilateral piece along the ramus of the jaw, it is necessary to make incisions parallel to the former, extending from the corners of the mouth directly into the cheek. These incisions should extend slightly downward rather than upward. The suggestion of J. Clark Stewart[3] to incise through all the tissues except the mucous

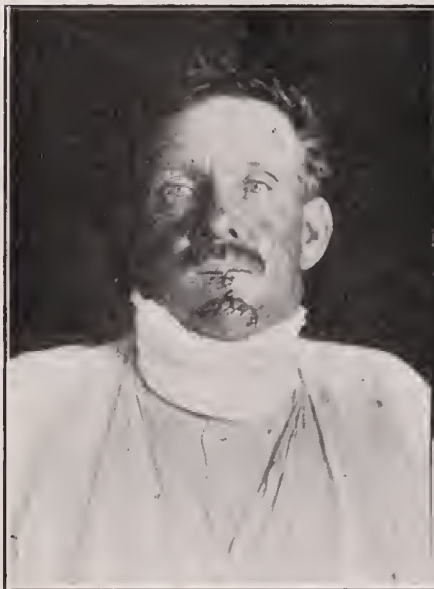

Fig. 4. Patient one week after having had one-half of the lower lip removed for cancer.

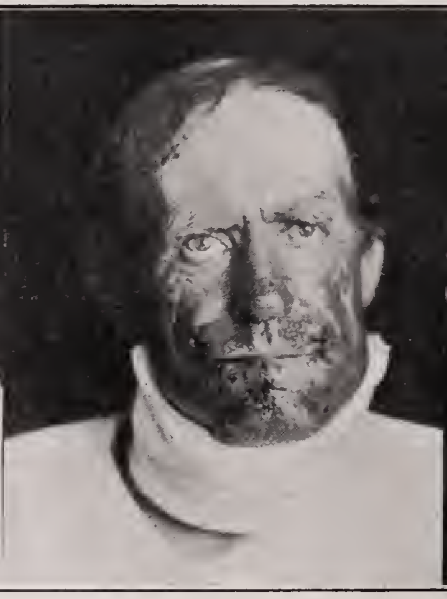

Fig. 5. Patient one week after having the entire lower lip removed and plastic operation as per Fig. 3.

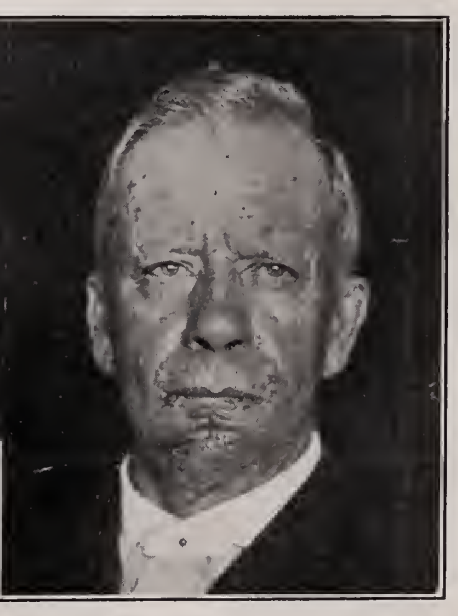

Fig. 6. Patient three weeks after removal of the entire lower lip and plastic operation as per Fig. 3.

membrane, then incise one-fourth inch higher and cut through the mucous membrane is a valuable point in the technic, since it gives plenty of mucous membrane to stitch over the raw surface of the lower lip and thus prevents contraction of the mouth. When the flaps on each side are thoroughly free, they are approximated as in the former case, the only difference being that the raw surface of the lower lip must be covered with mucous membrane as just mentioned. It is now seen that the lower lip is shorter than the upper, and also shorter than the skin remaining on the chin. These two latter are shortened by removing triangular pieces from the extremity of each incision. This plastic work was taught me by C. H. Mayo and I have not seen it described in the literature. (Figs. 4, 5, 6.)

From Jan. 1, 1907, to Jan. 1, 1912, there were 199 patients with cancer of the lower lip observed in the Mayo Clinic. This number includes only those patients having a cancer confined to the lower lip or one which had apparently originated in that location.

Twenty-five cases were diagnosticated from clinical observation alone; consequently cannot be proven to have had cancer. Two of these had had the local growth removed from the lip before coming to our clinic. From the histories it appeared certain that the condition had been cancer and it was thought best to remove the glands. This was done and both patients are well without signs of recurrence. Seventeen patients in this series were considered inoperable when first seen. Two others refused operation and four are not accounted for. This makes up the group of 25 cases in which we have a clinical diagnosis alone. The remaining 174 cases of proven cancer have both clinical and pathologic findings. These 174 cases really form the basis of my report.

One hundred twenty-six patients had a radical operation performed at the first operation. Ninety-nine of these have been traced; letters have been received from some; others have been examined within the past few weeks. Twenty-seven of the group have not been heard from. Of the 99 patients heard from, 83 have no sign of a recurrence either locally or in the glands of the neck. Sixteen have either died of their original trouble or now have a recurrence. Seven of these 16 patients had glands involved at the time of their operation and three others had an extensive growth on the lip.

Considering only the patients concerning whom we have obtained definite information, that is, the 99 from whom we have received letters or who have been examined, 83 of whom are cured, we have a percentage of cures following a primary radical operation for cancer of the lower lip of 83.8 per cent. It is interesting to note the time since the operation on these 83 patients. Two were operated on one year ago; 25 between 1 and 2 years; 17 between 2 and 3 years; 20 between 3 and 4 years; 15 between 4 and 5 years; and 4 over 5 years. In 18 of the above number glandular involvement was demonstrated by the microscope at the time of operation and 9 of these, or 50 per cent., are among the cured.

In another group I have placed 25 patients who had a late radical operation, that is, removal of the glands of the neck following one or two local operations on the lip or following treatment by paste. Twenty of these patients have been traced. Fourteen are classified as cured and 6 as not cured, giving a percentage of 70 per cent. of cures of those patients having had a late radical operation as compared with 83.8 per cent. cures of patients having had primary radical operations.

In twelve of the above 25 patients glandular involvement was demonstrated by the microscope at the time of the operation; 4 of these are cured. While this group of 25 is much smaller than the previous group, it is interesting to note that, when the radical operation was delayed, only a third of the patients having glandular involvement were cured as compared to 50 per cent. of cures in those having glandular involvement following a primary radical operation.

In five of the patients removal of the glands either as a primary or secondary operation was incomplete. These patients have been traced. In this group are cases in which an operation was attempted but abandoned because the involvement was found to be so extensive. It also includes cases in which glands were removed from but one side of the neck, the growth in the lip being confined entirely to one side. Two of these patients are well with no signs of recurrence.

In a last group, consisting of 18 cases, we have placed those patients having had an excision of the local growth without the removal of glands. Most of these patients were seen early in the disease but their general condition or age prevented a radical operation. Fifteen of these have been traced and 11 are cured, giving a percentage of 73.3 cures.

It has been stated by other observers or borne out by statistics that an early operation for cancer, although not a radical one, is often more favorable than a late radical operation. This holds true in the present series, as 73.3 per cent. of the patients having an early local excision were cured as compared with 70 per cent. of cures among those who had a radical operation in the late stage of the disease. There were no operative deaths in this series of cases.

SOME PRACTICAL POINTS IN THE DIAGNOSIS OF ACTIVE TUBERCULOSIS.*

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While the subject of early diagnosis in tuberculosis is an old one, and while it has been treated from practically every conceivable standpoint, yet it deserves the most careful consideration that the medical profession can give to any subject. The fact that one-tenth of the human race dies of tuberculosis and that probably one-fifth to one-fourth have symptoms of clinical tuberculosis sometime in their lives, and the fact that the early recognition of these symptoms is important in the cure of the disease, is excuse enough for presenting it to this body of medical men.

There are a great many misconceptions about tuberculosis. In the first place it is essential to understand something of the history of the disease after the bacilli enter the human body, in order to obtain a clear understanding of what early diagnosis means. We know today that tuberculosis is not the disease which we formerly thought it was. The studies of Hamburger, Roemer, Wolff-Eisner, von Pirquet and others have shown that the infection occurs in early life, that practically all children are infected with tuberculosis before they reach the fifteenth year of age. Further observations of these same men lead us to believe that infection from without in later life is not very common, but that it is to renewed activity in these early infections that the scattering of the disease and the production of clinical tuberculosis is due. This being true, we can readily understand how tuberculosis can manifest itself in a person who is apparently in good health and who has not associated intimately with any one who had the disease immediately prior to its manifestation.

A careful study of many cases of tuberculosis shows that quite a percentage of them break down when in full vigor. It is not necessary that we look for a preceding period of illness or gradual failing in health, although this is not uncommonly found; it sometimes being a contributing cause and again being a result of an unrecognized active lesion. For some reason, which has not yet been explained, tubercle bacilli that are taken into the body in early childhood and remain dormant for a period of years may suddenly become active and produce clinical symptoms in their host.

The diagnosis of active pulmonary tuberculosis is a very difficult matter. We may simplify it as much as possible and talk glibly about the changes in the respiratory note and the different symptoms which accompany early tuberculosis, but it requires great care and judgment in quite a percentage of the cases to be able to make a correct diagnosis of active tuberculosis at a time when the diseased area is small. We do not make a diagnosis on any one thing. It is not on clinical history; it is not on physical examination; it is not on the tuberculin tests; but, it is on our opinion of the case after we have summed up and considered all the data that we can possibly procure.

One of the essentials to making a diagnosis of early, active tuberculosis is for the examiner to give plenty of time to the examination. The changes in the lung are slight; there are no gross lesions; neither are there markedly manifest symptoms. Consequently the diagnosis must be made on an accurate observation of little things. This being true we should employ all measures which will make the examination easy and which will aid us in eliciting the information and data that we desire.

The examination should be in a warm room where the patients are comfortable. Patients should be stripped to the waist. This is essential because most important data will be obtained by a careful inspection of a suspected chest and this inspection should be carried out when the body is entirely free from clothing. It is necessary to see the character of the breathing; to note whether any part of the chest lags; whether the soft tissues are degenerated; whether the muscles are standing out more prominently than usual, in spasm. Such phenomena can only be elicited under favorable circumstances. It is difficult to note these changes in artificial light.

Another point which I deem of great value and one which is often overlooked is that the patients should be examined, if possible, when sitting in an upright position. I feel that many diagnoses are missed by making a physical examination when the patient is lying in bed. Changes in the muscles and soft tissues are more readily seen and felt; so are changes in motility more readily determined when the patient is in the upright position. The percussion note varies greatly according to the position of the patient,—the character and direction of the stroke and whether the patient is on a soft bed or a firm stool or table. The character of breathing when the patient is lying down and when he sits up is very different. When sitting up the abdominal musculature is tense because the muscles are in action in sustaining the body. The result is that the lower portion of the ribs is more fixed and the breathing assumes more of a pectoral type. When the patient is lying down and the abdominal muscles are flaccid, breathing then seems to be more of the abdominal type. The result is that the sounds heard at the apex on respiration are minimized when the patient is in a recumbent position and exaggerated when he is in a sitting posture. If any one doubts this let him examine a patient with moderately advanced tuberculosis, where many rales are heard in the lungs, both lying down and sitting up. The number of rales is greatly diminished when the patient is examined in a recumbent posture.

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*Read before the Twenty-first Annual Meeting of Idaho State Medical Association, Pocatello, Ida., Oct. 9-10, 1913.

It is also desirable for the examiner to take a position in which he is most comfortable. It is very difficult to elicit the fine changes in the lung when the examiner himself is in an uncomfortable position. Leaning over the patient in bed is not conducive to good work. On the other hand, if the patient be in an upright posture and the physician sitting on a chair or standing behind the patient, he is working at a greater advantage.

What we call the truly early diagnosis of pulmonary tuberculosis can be made in the majority of cases before the advent of bacilli in the sputum; consequently we are deprived largely of that important diagnostic measure. Nevertheless, if one will carefully examine the sputum collected over a period of several days in these early cases, where the amount of sputum is very small, he will often be rewarded by finding bacilli present. But, for the most part, we must not depend on this for our test of the presence or absence of tuberculosis. A point which is usually overlooked is that the presence of bacilli does not necessarily mean active tuberculosis, but this applies particularly to the late stages. Oftentimes advanced tuberculosis has assumed a thoroughly quiescent state and yet the patient expectorates bacilli.

The first point that I would insist upon in the recognition of active tuberculosis is a carefully taken clinical history. This will tell us a great deal. It will not only point to tuberculosis if that be present, but it will give us an idea of the conditions we are compelled to rule out before the diagnosis is certain.

Quoting from a former paper, "I wish to mention a few of the more common symptoms complained of by patients suffering from early active tuberculosis. While all are rarely present, usually two or more of the following will be: Malaise, a feeling of being run down, lack of endurance, frequent and protracted colds, hoarseness not due to laryngeal disease, slight indigestion with loss of a little weight, aching between the shoulders, tickling of the larynx, causing a clearing of the throat or dry hacking cough, night sweats, slight rise of temperature, spitting of blood, and pleurisy. Any combination of two or more of these should make the physician think of tuberculosis and require that it be eliminated before a definite diagnosis be made. Spitting of blood or pleurisy should always be considered as indicating tuberculosis unless definitely proven otherwise."

It is probable that an explanation of the etiologic factors in the above symptoms might be of some value in facilitating early diagnosis. I believe that the common early symptoms which I have enumerated may be divided into three groups, based upon their etiology.

Tubercle Toxins	Reflex.	Tuberculous Involvement per se.
Malaise.	Hoarseness.	Frequent and protracted colds.
Feeling of being run down.	Indigestion.	Pleurisy.
Lack of endurance.	Chest pains.	Spitting of blood.
Nervous instability.	Aching of the shoulders.	
Indigestion.	Tickling in the larynx.	
Night sweats.	Cough.	
Temperature.	Increased pulse rate.	
Increased pulse rate.		

By looking at the above groups one can see that both toxic and reflex symptoms are present in nearly every early case of tuberculosis. To be sure, not all of those enumerated are present in every case; but, as a rule, two or more of them will be found. The clinical history should always be taken before physical examination is made, because by so doing one obtains information by which he can better judge his physical findings.

The fact mentioned above that tuberculosis starts in childhood and remains latent often through a period of many years before producing clinical symptoms, gives us an entirely different idea of the physical examination of the chest from what we would have were we expecting the involvement to take place immediately prior to the manifestation of symptoms. It is somewhat difficult to know to what extent the disease extends from the lymph glands, where it is often found in early childhood, to the lung where we find it in the great percentage of cases of tuberculosis that manifest clinical symptoms. From a great number of postmortems that have been made, it seems that the lung itself shows a deposit in 60 or 70 per cent. of the bodies examined. Therefore, it can be seen that deposits are often present in the lung without producing clinical symptoms. Under such conditions it gives us very little information in determining whether or not active tuberculosis be present to find alterations in the percussion note or respiratory sounds. We must have more than this. To be sure, these findings cannot be overlooked, but the fact I wish to emphasize is that these changes by themselves are not so important in making a diagnosis of active tuberculosis as is often thought. They are of great importance, however, when they are carefully considered in relationship with other data. Take a case where we have present in the clinical history, two or more of the symptoms indicative of active disease enumerated above, together with signs of infiltration as shown by the higher pitched percussion note or the greater resistance to the percussing finger, and a respiratory note which is harsher and rougher than normal, with perhaps a slight prolongation of expiration, with or without signs of moisture. Under such circumstances the fact that there is a deposit in the lung assumes a different importance. While of comparatively no importance, providing no symptoms are being produced, it is of great importance when symptoms are present.

The important thing for the examiner to know is *when* these findings on physical examination mean that active tuberculosis is present. This cannot be determined by physical examination alone, but only by correlating all the data obtained from the clinical history and physical examination and the various tests that we have.

In my experience I am coming to rely a great deal on inspection and palpation in helping me to determine whether or not the lesion in the lungs is active. To be sure, if we find a positive clinical history and positive findings on percussion and auscultation, particularly with fine localized rales, we could make a diagnosis which in all probabilities would be correct; but, without the presence of certain peculiar respiratory rales and without a positive clinical history, we would not be justified in making a positive diagnosis of activity. Inspection tells us not only that there is a lesion in the lung, but it gives us something of an idea as to whether or not this is active.

By watching the movements of the chest wall or, if we prefer, by feeling its movements, we can see whether or not there is a lagging at the apex or the base. A lagging at the apex or the base of a lung indicates that something has interfered with the enervation of the muscles which produce motion in those regions. If we find an absence of the normal motion over the base of a lung we can say, in all probabilities, that something is interfering with the action of the phrenic nerve on that side, because this furnishes motor power for the diaphragm. The limited motion which accompanies the phrenic disturbance is not confined to the base of the lung but affects the entire side. I am not so sure but that the largest factor in apical lagging is the interference with the phrenic nerve, although we must realize that the muscles which cover the apex of the lung are also hampered in their motion because of a similar reflex motor disturbance. The nerves which supply these muscles come from the same segments in the cervical portion of the cord which receive impulses from the sympathetics that supply the lung; consequently there is a reflex disturbance in their action. Unless this lagging should be due to a localized pleurisy, resulting in adhesions, or a gross lesion in the lung resulting in permanent change in lung tissue, it will most probably eventually clear up when the inflammation has passed over. In the early slight lesions, however, a lagging of the bases of the lungs, particularly a well-marked one, or a lagging at the apex is presumptive evidence that the activity in the underlying lung has not wholly disappeared.

Another very important sign which also indicates the presence of active involvement is spasm of the apical muscles. The mechanism of its production is the same as that just mentioned. This shows particularly in the sternocleidomastoid, scaleni, trapezius, levatoranguliscapulae and rhomboidei. These muscles receive their nerve supply from the cervical portion of the cord. The sternocleidomastoid and trapezius receive other supply from the spinal accessory; consequently the irritation in the lung produces a stimulation of the sympathetics which come from the cervical section of the cord. This irritation sends impulses to the cervical portion of the cord which reflects back on the motor nerves which take their origin from the same segments. The result is that these muscles are more tense during active inflammation in the lung than are their fellows which cover the apex which is free from disease.

This is not only a physiological consideration but in my experience it has proven to be a very practical sign in differentiating between old, quiescent lesions and those manifesting activity. Given a clinical history indicative of tuberculosis, a spasm of these important neck muscles and a diminished motion of the diaphragm and we have almost positive evidence that there is an active disease in that side of the chest without further examination, but no matter how positive the evidence obtained by one method of examination, we should confirm it by all others that are possible.

The advantage attached to inspection and palpation is that we are not so apt to be misled when we find old healed or quiescent lesions as we are by percussion and auscultation. By one method confirming the other, we are strengthened in our diagnosis. While these methods have been looked upon as refinements by some, they are not so. They are eminently practical and I urge their utilization upon those who are endeavoring to differentiate between active and quiescent lesions.

The place of the x-ray in the diagnosis of early tuberculosis requires mention. In the hands of experts it has proven of great advantage in studying the chest and in the diagnosis of early lesions. It has been of special advantage in the diagnosis of tuberculosis at the hilus and has been able to show infiltrations in this part of the lung which would have been easily missed by the ordinary methods of examination. If the work be done, however, by the ordinary x-ray operator, I mean by one who has had no particular experience in doing the finer work in the chest, the results are practically valueless, in comparison with a careful clinical examination. A good clinician should do much more toward making a diagnosis of early tuberculosis without an x-ray than an ordinary operator could do without considering the clinical data.

I take up the question of the tuberculin tests, realizing that a great many members of the profession are discarding them, believing that they are of no value in adults. This is contrary to my experience. I believe that it can be shown that tuberculin tests, when technically made and carefully observed, are of great value in differentiating between active and quiescent or healed lesions.

Preliminary to discussing the value of the tuberculin test it is necessary to understand that the tuberculin reaction is an indication that the cells of the body have been sensitized to tubercle protein and that tuberculosis-immune bodies are present in the tissues. This is not an infallible test for the presence or absence of tuberculosis, but a test for the presence or absence of specific antibodies. A positive tuberculin reaction is proof that the body has been fighting an infection with tubercle protein which means practically that the body is infected with tuberculosis. A negative tuberculin reaction, on the other hand, does not necessarily mean that tuberculosis is not present or that the body has not been fighting a tuberculosis infection, because there are certain conditions when tuberculosis may be in the body and a reaction may not occur; for example, when a patient is cachetic or when the disease is advanced, or when certain other infectious diseases are present. It is necessary to understand this in order to fully understand the part that the tuberculin reaction plays in diagnosis.

It is necessary to discuss briefly the theory of the tuberculin reaction in order to understand how the character of the reaction as I shall describe it, will give evidence as to the nature of the infection present, whether it be quiescent, partially quiescent or healed. The tuberculin reaction is a protective manifestation. It comes only when the body has been sensitized to tubercle bacilli and their products. When an infection occurs this sensitization takes place. The greater the demand for the body to protect itself, all things else being equal, the more the cells will show this sensitization and the more they will respond in the formation of the protective antibodies which are concerned in producing the tuberculin reaction. Consequently, when the body is called upon to fight an active infection, the call for defense is urgent, the cells are highly sensitized, and a great number of antibodies are formed. The tuberculin reaction being a combination of the antibodies with the tuberculin brought in contact with the tissues, it can readily be seen that the greater the number of antibodies present, the quicker the tuberculin will be satisfied and the sooner the maximum reaction will occur. When a less active infection is present a less urgent demand for defense is made and fewer antibodies are formed; consequently it will take a longer time for sufficient antibodies to gather at the point of inoculation, to completely satisfy the tuberculin and produce the maximum reaction.

The principles just described will hold for all forms of the tuberculin reaction, but I shall confine my discussion to the cutaneous reaction as the one which can be utilized most easily by practitioners in general; and in my experience one which has proven reliable. If the tuberculin reaction be a protective one and if the body elaborates its protective bodies according to the demands made upon it by the infection, then we would expect certain conditions to be present when the disease is active, others when it is quiescent or partially quiescent, and still others after healing has occurred.

When fighting an active infection we would expect a great number of antibodies to be present. Consequently, when the tuberculin is applied, the entire amount of tuberculin should be satisfied quickly, resulting in a prompt maximum reaction. When the disease is quiescent, or partially quiescent, on the other hand, we would not expect as sudden or as large a demand on the body for antibodies. Consequently, we would expect a longer time to elapse before all of the tuberculin used in the test would be satisfied, because, there being fewer antibodies in the tissues, it would take them longer to gather at the point of inoculation and combine with the tuberculin. After healing has occurred, immunity still remains, but it seems to be of the histogenetic type, rather than the humoral. Antibodies seem to disappear from the circulating fluids and yet the body is protected because of the altered condition of the cells. Therefore, after healing has occurred, we would expect the reaction to be negative.

Working upon this theory I have carefully examined numbers of patients during the last few years. I will not report in detail at this time, having done so in other communications: (Tuberculin in Diagnosis and Treatment, C. V. Mosby Co., 1912). It is sufficient to say that where I have taken a detailed clinical history and made a careful physical examination, carefully examined the condition of the patient's muscles and soft tissues, and then given a tuberculin test, I have found a remarkable coincidence between what I would diagnose as active tuberculosis, quiescent tuberculosis and healed tuberculosis from clinical history and physical examination and what would be diagnosed as such by the character of the resulting tuberculin reaction, as I shall now mention.

My first observation after examining a number of patients was that those who showed active symptoms reached their maximum reaction (all the tuberculin employed in the test was satisfied by antibodies) for the most part within the first twenty-four hours. I also noted that those who showed a delayed maximum reaction, that is, where the reaction, although it might begin just as early as in the first class of cases, did not reach its maximum as early, but kept increasing in size after twenty-four hours, up to thirty-six or forty-eight hours and even longer, were the patients whom I had classified as quiescent or partially quiescent. Those that I had classified as having healed lesions, showing neither clinical symptoms nor active physical signs, were the ones that gave practically no reaction.

It should be mentioned that this test is particularly applicable to early and suspected tuberculosis and not so valuable in advanced tuberculosis. In the examinations which I have reported there have been very few patients who had advanced to the point of having bacilli in the sputum. Remembering that the formation of protective antibodies is a question of cellular response, it can readily be seen that any tuberculin reaction depends considerably on the physical condition of the patient. In fact, these tests are not particularly applicable to patients who are run down and in a state of low vitality.

In order to make tests of this kind for comparison, certain precuations must be observed. In the first place the test should always be made in the same way. I think it is much better to use a von Pirquet scarifier than a scalpel, because it is desirable to always use as nearly the same amount of tuberculin as possible, the same dilution, the same depth of abrasion on the skin, and, in fact, the same minutiae in every particular; otherwise the results cannot be compared.

While I would not suggest so simple a matter as an accurately administered and carefully observed tuberculin test as being capable of taking the place of the judgment that is necessary in forming an opinion as to whether or not active tuberculosis is present, I would suggest it as giving very helpful information.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY MEANS OF ARTIFICIAL PNEUMOTHORAX.*

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While this method of treatment was advocated as early as 1822 by the English surgeon, Carsons, the honor for its introduction as a therapeutic agent belongs to Prof. Carlo Forlalini who began lung immobilization experiments in animals and human beings in 1882 and, after twelve years experimental work, reported his findings to the International Medical Congress at Rome, in 1894. Forlalini perfected his technic and had splendid success in his clinic, but his work attracted little attention even in Italy.

In 1898 Murphy published a report on five cases. However, little attention was paid to this new therapeutic method until Brauer and Spengler published the results of their work in 1906. Attracted by their favorable report, tuberculosis sanatoria in Europe and more recently in this country have taken up the method and given it a definite place in tuberculosis therapy and, judging from the ever increasing number of contributions whose authors seem satisfied, it is evident that pneumothorax therapy is constantly obtaining more adherents.

All those who have had an opportunity to test the method on properly selected cases agree that often strikingly favorable results are obtained and that some otherwise hopeless cases of tuberculosis become practically sound and remain so. Forlalini has confirmed this observation by anatomic proof in the examination of lungs that had been compressed in cases dying of intercurrent disease. He found the lung air-empty, tuberculous areas were dry and either surrounded by a capsule of fibrous tissue or, in the case of cavities, only a dense scar remained and there was no evidence of a fresh tuberculosis.

An explanation of this favorable action does not seem difficult. The lung compressed is no longer an air-containing organ in constant motion, but becomes an immovable body of solid consistence and the tuberculosis, instead of its characteristic tendency to form cavities in the lung, now conducts itself similarly as it would in a solid tissue with a tendency to fibrous tissue formation. Cavities are pressed together and their walls held at rest in order that healing may take place. The result of the pure mechanical action of the compression upon the destructive process is that the tuberculous sputum is pressed out of the air-containing parts opening into a bronchus, like water from a sponge. The extension of the disease through aspiration of sputum or blood in healthy parts is made impossible through fixation of the lung and compression of the finer bronchi. All small lymph and blood vessels are compressed and the resorption of toxins from the diseased area more or less prevented.

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Clinical proof of this is the fall of temperature and reduction of sputum which frequently takes place after the first compression. Corresponding to the compression of the capillaries the blood circulation becomes slower, especially the arterial portion of the lung circulation whose carbonic acid content in blood is accordingly distinctly increased. This venous congestion in combination with the lymph congestion causes, perhaps, the profuse scar tissue formation, and it would not be impossible that it also exerts a local autotuberkulinization by inhibiting the growth of the tubercle bacilli.

The experiments of von Bruns and Begtrup-Hansen have proven that the curative value is not due to Bier's hyperemia, as was formerly thought, for the blood content of the compressed lung, in spite of the arterial congestion, is distinctly less than in the other lung. Clinical observation confirms this for, after shutting off the function of the one lung, the blood must pass through the other for oxygen absorption and, if its blood content were not higher than normal, a respiration insufficiency would exist. However, we see no increase in the respiration while the patient is at rest. After the organs have become accustomed to new pressure conditions, the oxygen absorption of the non-compressed lung takes place as normal and its blood content is accordingly greater.

This hyperemia explains the favorable influence compression of the badly diseased lung produces on a not too far advanced disease on the opposite side which is further benefited, as is the whole body by the cutting off of toxin production and resorption on the compressed side. At the same time it must be pointed out that, in cases with extensive disease on one side and active disease on the other, the patient's condition may be aggravated by the increased function and consequent toxin liberation following compression. However, Forlalini has reported success even under these circumstances by first attacking one side, then the other.

Since the method is associated with certain dangers, it should be restricted to the following types of cases:

(1) Unilateral tuberculosis, but so severe or widespread that healing after a conservative trial of hygienic-dietetic methods is improbable or impossible.

(2) Progressive, moderately advanced cases, which are getting worse in spite of treatment, should be compressed before too far advanced. Forlalini says that it is not the extent but the steady progress of the disease which indicates the procedure.

(3) Uncontrollable pulmonary hemorrhage.

(4) Rigid wall-cavities either tuberculous or following lung abscess or bronchiectasis.

(5) Artificial pneumothorax is indicated with severe disease on one side, even if the other side has some activity, and the necessity of selecting purely one-sided cases is not so important. However, any guide as to how much mischief can be present on the good side and not be made worse by the procedure is likely to lead one astray. Generally speaking the indications are doubtful if more than one-third of the good side is affected, without marked destructive changes and confined to the upper lobe.

Success depends upon a proper degree of compression. Attainment of the latter depends upon whether the parietal and visceral pleura are adherent. Slight recent adhesions offer little or no difficulty, but are associated with a danger of air embolism. On the contrary, dense pleural adhesions baffle every attempt. I cannot be too emphatic in warning against forcibly breaking down adhesions. The contraindications, aside from dense adhesions, are extensive disease on both sides, and severe complications in other organs which does not include slight laryngeal infection or non-tuberculous diarrhea.

Dangers are remote with proper technic. Bad results to the other lung can be avoided by proper selection of cases after a careful physical examination, supplemented by an x-ray plate which is indispensable for refillings to determine the degree of compression, location and extent of adhesions. Injurious effects upon the heart and respiration are controlled by regulation of the gas introduced through manometer control. In many cases a pleural effusion occurs which is of short duration and runs a mild course.

An artificial pneumothorax even when complete causes little inconvenience to the patient. The heart, although at times displaced entirely to the right side in left sided compressions, accommodates itself in a remarkably short time to the altered condition so perfectly that patients, even after quite severe physical exertion, do not experience any inconvenience. The time necessary to maintain the compression is naturally impossible to say so as to include all cases and conditions, but it must be sufficiently long to prevent the reactivation of the disease as a result of re-expansion. Average cases require six months to two years. It is best to maintain the pneumothorax for a long time, for reinflations are required less often as time goes on. Furthermore, the compressed lung, even after one and one-half years' compression, resumes its normal function after expansion.

Artificial pneumothorax is not to supplant other recognized methods of treatment, but to be used with them and when other methods seem to be of no avail. Inasmuch as the medical judgment quite overshadows the surgical technic, I shall not go into details of the latter here. Let me only briefly say that we employ the puncture method of Forlalini which has all the advantages of the Brauer or incision method and none of the disadvantages. The nitrogen is introduced, on first inflations, through a Soloman catheter, but on reinflations we prefer Balboni's needle. Our apparatus is a modified Forlalini. Novacain is used as a local anesthetic and not only renders the procedure almost painless, unless dense adhesions are present, but also prevents the much dreaded "pleural eclampsia."

The amount of gas introduced is regulated by both mercury and water manometer readings, and it is to be emphatically mentioned that gas must not be admitted unless a negative pressure and distinct respiratory oscillations of more than 1 cc. of water are shown by the manometer, which indicates the needle is in the pleural space and in this way the danger of gas embolism is avoided. An exact observation and knowledge of manometer conditions is of greatest importance in pneumothorax therapy.

Our work has been confined to typically progressive cases and for convenience I have grouped them in four classes:

Class I. Patients dying after beginning of treatment. One case.

Female, aged 29, single, entered June 2, 1913. Progressive tuberculosis for four years. One month previously had hemorrhages followed by high fever

On entry had temperature of 103° to 105° in p. m. Physical examination revealed bilateral tuberculosis with caseous pneumonia on left side. Case was regarded hopeless. Partial collapse was obtained with improvement of temperature which was temporary. No further inflations were undertaken. Patient died July 12, 1913.

Class II. Patients in whom it was attempted, but where no free pleural space could be found. One case.

Female aged 28, married. Was entered May 28, 1913. Physical findings revealed unilateral cavernous tuberculosis. After two months in the sanatorium was rendered fever-free, gained 12 pounds in weight, but had profuse expectoration. Several attempts were made to collapse the lung, but dense adhesions caused great pain and the treatment was discontinued. Patient's condition remains unchanged.

Class III. Patients where partial pneumothorax could be induced but adhesions prevented a complete collapse. Seven cases.

Case 1. female aged 29, married. Entered Nov. 30, 1910. Had been sick one year. Physical examination revealed fibrocaseous tuberculosis left upper and lower lobes with cavity formation in left upper. Infiltration with beginning softening of right upper lobe. Heart, moderate hypertrophy, systolic murmur at apex. Fever to 102° in the afternoon. X-ray showed diffuse, conglomerate patches on left, with cavity in left upper lobe, and immovable lung borders on left. The heart shadow was indistinguishable except at apex, which was displaced to the left. Distinct peribronchitic stripes were seen on both sides.

Patient improved constantly under hygienic and dietetic measures up to September, 1911, then left to continue treatment at home, returning one year later with the right side about the same as upon entrance two years previous. The left side was more advanced and there was general constitutional disturbance. Temperature in the p. m. 102°, profuse expectoration. Slight improvement followed on hygienic and dietetic measures.

On March 7, 1913, 500 cc. nitrogen were introduced in left side, causing great pain. The manometer indicated dense adhesions, as were shown by the physical examination. However, the patient's condition was improved and she requested more gas. March 18, 400 cc. nitrogen were introduced, causing much pain, but the patient was better in every way, scarcely raising anything and the temperature became normal. On April 3d several attempts were made to find free space, as none could be introduced into the previous areas on account of already existing high pressure. The catheter was introduced in the 6th interspace in mid-axillary line. No manometer reading corresponding to respiration was obtained at any depth, but a cardiac reading was visible. It was inferred that a portion of lung adherent to the pericardium was entered and no gas was introduced. The catheter was then introduced at the angle of the scapula. A very slight manometer reading. Less than 1 cc. of water was obtained, and it was thought that perhaps the catheter was clogged with blood. The rubber tube leading to the catheter was compressed to force out the blood clot. (Since this accident, if clogging of a needle is suspected, we pass a filiform bougie through the catheter.)

The patient suddenly gasped and became unconscious. The head was immediately lowered and camphor injected. The loss of consciousness was followed and accompanied by tetany of the left arm and leg and strong diversion of the eyes to the left, paralysis of the left side of the face and tongue, and paralysis of the right arm and leg. The pulse was slow and feeble, respiration was very slow and shallow. After remaining in this state for five minutes, the eyes gradually assumed direct position, the tetany disappeared from the left arm and leg, paralysis of the face and tongue began to clear up and finally the paralysis of the right arm and leg disappeared. In 15 minutes the patient regained consciousness and complained only of a slight tingling sensation in her right arm and leg. In 25 minutes she had no complaints and felt as before this attempt. Cough and expectoration remained much improved until May, when patient contracted mumps and fever again appeared. In June she had a hemorrhage followed by fever. No further inflations have been attempted on account of dangerous adhesions. At present writing patient's condition is unchanged.

Case 2. Female aged 21, married. Entered April 4, 1911. Examination revealed bilateral disease. Left upper cavernous; lower, infiltration and dry pleurisy. Right infiltration no softening, tuberculous laryngitis. Temperature 102°, sputum 50 cc. daily Under hygienic and dietetic treatment rendered fever-free and general condition improved. Physical signs were the same.

Jan. 18, 1913, 490 cc. nitrogen were introduced. On Jan. 25 1000 cc. nitrogen were introduced. Great pain was experienced both times, due to tearing adhesions. Cough and expectoration were improved. X-ray showed strong bands of adhesion and our one case of gas embolism led us to give up further attempts. Patient's condition remained much improved for two months, then began to cough and expectorate as before, although her temperature and general condition have remained much improved. Patient desires another attempt. (See foot note.)

Case 3. Female aged 20, bilateral disease. Entered Sept. 19, 1911. Physical examination revealed left fibrocaseous tuberculosis with cavity in left upper lobe, infiltration in right upper lobe. Temperature 101°, profuse expectoration. X-ray confirmed physical findings and showed dense adhesions on left side.

Jan. 7, 1913, 700 cc. nitrogen were introduced associated with pain. Jan. 24 2000 cc. nitrogen were introduced. Feb. 8 2000 cc. nitrogen were introduced.

On the latter dates no pain or discomfort was experienced and, while the manometer oscillated with the respiratory movement we suspected the catheter had passed through the dense adhesions into a cavity which permitted the gas to escape through the mouth. No gas could be found by x-ray or physical examination. No further attempts have been made owing to the danger of gas embolism. Patient's condition remains much improved.

Case 4. Unilateral saccular bronchiectasis and adherent pleura following pneumonia 12 years previous. Entered August last and, while the amount of sputum is somewhat reduced, I am not yet certain the partial pneumothorax is responsible. Case will be reported later. (See foot notes.)

Case 5. Female, aged 32, married. Entered June 30, 1913. Bilateral fibrocaseous tuberculosis with lung gangrene in left lower lobe, persistent hectic fever since March, 1913; morning temperature 93.3° to 99°, afternoon 101° to 105°, sputum with fetid odor 500 cc. daily, severe constitutional disturbance, prognosis hopeless. Aug. 20 500 cc. nitrogen were introduced with some pain. Aug. 29 800 cc. nitrogen introduced with some pain. After first inflation sputum and cough were no better but temperature was improved. After second inflation cough and expectoration improved some. Dense adhesions prevented satisfactory collapse. Case too early to report. (See foot notes.)

Case 6. Male, single, aged 34. Admitted Nov. 10, 1912. Unilateral cavernous tuberculosis right upper lobe, sputum 40 cc. daily. March 26 1000 cc. nitrogen introduced. Many adhesions, cough and expectoration less and improved in every way. Patient moved to another city on account of business; since continued treatment with improvement.

Case 7. Female, aged 26, single. Entered Jan. 18, 1913. Cavernous tuberculosis left upper lobe with thickened pleura, excessive cough and profuse expectoration. After six months no improvement in physical signs under hygienic and dietetic measures. June 26, after several attempts to find free space, 500 cc. nitrogen were introduced. July 8 150 cc. nitrogen were introduced in fourth intercostal space in mid-axillary line. July 20 350 cc. nitrogen were introduced in sixth intercostal space mid-axillary line, causing much pain on account of adhersions. July 11 225 cc. nitrogen were introduced in sixth intercostal space posterior-axillary line, and 175 cc. in eighth intercostal space posterior-axillary line. Patient was so much improved she went home but returned for more gas on account of increased cough and expectoration. Aug. 29 1000 cc. nitrogen were introduced at left angle of scapula with high positive pressure. Patient has improved in every way.

Class IV. Cases wherein a complete pneumothorax could be obtained. Seven cases.

Case 1. Female, aged 29, married. Present illness began Nov. 1, 1911. Two days after the extraction of some teeth under an anesthetic she developed fever, coughed and raised foul-smelling sputum. Case was diagnosed as pneumonia with abscess. She was confined to bed with temperature ranging from 99 to 105°, with night sweats which continued two weeks, when during a spell of coughing a quantity of pus containing part of a tooth was coughed up. After this the temperature became normal but she continued to raise large quantities of fetid sputum, amounting to from 250 to 500 cc. daily in which no tubercle bacilli were ever found.

A vaccine was prepared from the sputum and administered, but after seven months she was no better. Cough was constant and her general health was bad. Patient entered Dec., 1912. Physical examination, confirmed by x-ray, showed a multilocular cavity in the region of the right lower bronchial branches. Sputum to 500 cc. daily of foul odor and separating in three layers, tubercle bacilli negative.

Jan. 7, 450 cc. nitrogen were introduced in mid-axillary line, seventh intercostal space. Patient complained of nausea. Twenty-four hour specimen of sputum measured 500 cc. Jan. 25, 1700 cc. nitrogen were introduced in mid-axillary line, seventh intercostal space; sputum diminished two-thirds. Feb. 6, 2300 cc. nitrogen were introduced in mid-axillary line, seventh intercostal space; sputum 60 cc. daily. Feb. 21, 1600 cc. nitrogen introduced. X-ray showed complete pneumothorax. March 25, 1400 cc. nitrogen introduced. April 1, 1300 cc. nitrogen were introduced; sputum 20 to 40 cc. daily. April 15, 1200 cc. nitrogen introduced. April 19. 1000 cc. nitrogen introduced; heart and anterior mediastinum contents displaced to left. Apex in left mid-axillary line. May 3, 1600 cc. nitrogen were introduced; sputum 20 cc daily. May 18, 1000 cc. nitrogen were introduced; sputum 10 cc. daily. July 1, 1000 cc. nitrogen introduced; sputum 0 to 10 cc. Aug. 7 800 cc. nitrogen introduced. Since this time the patient neither coughs nor expectorates. Feels and looks perfectly well.

A moderate pneumothorax, which is gradually absorbing even when complete, caused absolutely no inconvenience. The patient made a trip to Colorado and ascended to an altitude of 10,000 feet with little difficulty. She has participated in dancing during the past four months and, according to her last report on Sept. 7, she believes that she is well. (See foot note.)

Case 2, male, aged 16. Well up to first week in January, 1913, when he had a sudden hemoptysis of one-half pint of blood. This was followed by another of the same quantity in two days, after which he spat up blood daily. Early in February he had another large hemorrhage, followed by spitting up clots of blood which lasted until Feb. 15, when in a physician's office lost one quart of blood and seemed almost exsanguinated. Gelatin, horse serum, calcium salts, morphin and amyl nitrite had all proven of no avail. Two days later, while in hospital at rest in bed, he had another hemorrhage of one quart.

When first seen, on Feb. 18, the patient was pale and semiconscious from morphin which had been injected, pulse rapid and feeble. Great difficulty was experienced in determining the bleeding side, as the physical signs were entirely negative except a few fine, crepitant rales over the left apex which were interpreted as due to an absorption atelectasis from plugging of the fine bronchioli, as is so often the case in hemorrhagic tuberculosis. On this basis alone 800 cc. nitrogen were introduced into the left side. The following day a slight hemorrhage took place which naturally caused much anxiety lest the wrong side had been collapsed. However, examination showed a compression of only the lower lobe and another 800 cc. nitrogen were introduced, inducing a complete pneumothorax. The heart was pushed to the right of the sternum. All other methods of treatment were discontinued, except ice on the heart on account of a tachycardia. Recovery was uninterrupted. March 15, 800 cc. nitrogen were introduced to maintain the pneumothorax. The patient played ball in the meantime and suffered no inconvenience from the complete compression, with heart in dextroposition.

May 27 all gas had disappeared, heart was back to normal position and entirely normal, lung findings were negative. Patient had gained 18 pounds in weight, felt and looked perfectly well and has remained so since.

Case 3. Female, aged 20, single. Entered June 6, 1913. Had been sick four years, temperature to 102° in afternoon, lost 20 pounds in weight, night sweats, profuse expectoration, chiefly unilateral, infiltration left upper lobe with cavity formation, fresh disseminated tuberculosis of lower lobe. The temperature steadily increased and disease progressed in spite of absolute rest in bed. July 2, 800 cc. nitrogen were introduced, followed by a slight improvement in temperature, remaining under 101°. July 10 1000 cc. nitrogen were introduced. followed by further improvement in temperature, cough and expectoration. The temperature remained under 100° for ten days. During the following month no gas was introduced and the temperature again ascended to between 101 and 102° in the afternoon. Cough and expectoration became worse. Aug. 10 750 cc. nitrogen were introduced, followed by immediate improvement. Aug. 27 1300 cc. nitrogen were introduced, bringing the temperature range in the afternoon from 98 3-5 to 99 4-5° with almost a complete disappearance of cough and expectoration. Examination showed a complete pneumothorax with heart displaced to the right of the sternum. Sept. 11 1000 cc. nitrogen were introduced to maintain pneumothorax. Patient is now permitted to sit up and is constantly improving. Temperature is under 99° in the afternoon, cough and expectoration almost gone and patient feels better in every way. Without a pneumothorax there seems to be no question but that the patient was doomed. The present prognosis is good. (See foot notes).

Case 4. Male, aged 30, married. Entered July 14, 1912. Disease began with sudden hemoptysis in latter part of May, followed by another hemorrhage on June 30. After this fever, cough and expectoration appeared, followed by progressive loss in weight. Temperature in afternoon 101°. Physical examination revealed bilateral infiltration of both upper lobes with softening in left apex. Patient improved under hygienic, dietetic, and specific treatment, was fever free and gained in weight and strength. Cough and expectoration almost disappeared and was able to do light work. Sept. 25 he had a severe hemoptysis, followed by a temperature of 102¾°. Hemorrhages occurred daily for four days. The temperature advanced to 102 and 103° and remained so for ten days, then gradually fell to 100 and 101° with morning remissions. Examination showed an aspiration tuberculosis disseminated throughout the left side with a fresh pleurisy. During the next four months, in spite of rigid hygienic, dietetic and specific methods, including, of course, absolute rest in bed, the temperature continually advanced to 102° each afternoon. The physical signs were progressive, general condition of the patient was bad.

This continued until Feb. 2, 1913, when a fresh breaking down of tissue was detected on the right apex. 1300 cc. nitrogen were introduced into the left side at once, followed by immediate improvement in temperature, dropping to 100° in four days and continued no higher. On Feb. 9 1700 cc. nitrogen were introduced; the patient complained of nausea and vomiting and considerable dyspnea which was of brief duration. Feb 26 1400 cc. nitrogen were introduced. The temperature now continued between 99 and 100°. The pneumothorax was complete, heart apex to right of sternum, general condition about the same, although the cough and expectoration had almost disappeared. March 15 1300 cc. nitrogen were introduced, followed by further improvement in temperature, frequently remaining under 99°. General condition of the patient began to improve, his appetite returned and he began to gain in weight and strength. April 22 850 cc. nitrogen were introduced. One week later the temperature became normal and continued so thereafter, the pneumothorax filled with a serous exudate. The patient continued to improve. No further gas was introduced as it was gradually replaced by fluid.

The patient continued to improve and, after eight months of absolute rest in bed, was permitted to sit up in a chair and finally walk. Cough and expectoration have now entirely disappeared, no rales are to be heard in the right apex, and the left is slowly expanding with absorption of exudate. The patient feels well, has regained his lost weight and has returned home to his work. Before the pneumothorax the prognosis in this case was absolutely unfavorable and his present condition can justly be attributed to the pneumothorax.

Case 5. Female, aged 34, married, sick two years. Entered April 2, 1913. Temperature 100 to 102°, marked constitutional disturbance and profuse expectoration. Physical examination revealed bilateral infiltration of right upper lobe without softening. cavernous tuberculosis of left upper lobe, disseminated lesions lower left lobe. After three months absolute rest in bed. condition was somewhat better but weighed less, cough and expectoration were same. Patient left the sanatorium and disease advanced. Returned Aug. 22, 1913, when 600 cc. nitrogen were introduced in left side, associated with little pain due to tearing of recent adhesions. Cough, expectoration and appetite improved at once. Temperature which was formerly unstable now remained normal, sputum 50 cc. Aug. 25 600 cc. nitrogen were introduced. Patient gained six pounds since first inflation, sputum 10 cc. daily. X-ray showed only a partial compression which no doubt can be completed. Case is improving continually but too recent to comment on further.

Case 6. Female, aged 26, married, sick two years. Entered Aug. 20, 1913; temperature 103 to 105° in afternoon, marked constitutional disturbance and profuse expectoration amounting to 100 cc. Physical examination revealed bilateral disease. Right side infiltration without excavation. Left extensive cavernous tuberculosis with caseous pneumonia. X-ray showed darkening of right apex to third rib, dense shadow on left throughout with lighter, circumscribed areas corresponding to cavities. Aug. 25 800 cc. nitrogen were introduced in left side, complained of adhesion pain and some nausea. The temperature fell at once to 100°, remained two days, then gradually rose to 103°. Sept. 1 1000 cc. nitrogen were introduced which was followed by an immediate fall in temperature which ranged from 100 to 101° thereafter. Cough and expectoration were diminished and patient has improved in every way. Sept. 11 1000 cc. nitrogen were introduced, temperature not over 100°, cough and expectoration much improved. The prognosis in this case was hopeless but is now certainly more favorable. (See foot notes.)

Case 7. Female, aged 27, married. Entered April 12, 1913. Sick since fall of 1911. Temperature to 101 2-5°, 20 pounds loss in weight, profuse expectoration, diazo reaction marked positive. Physical examination bilateral. Right infiltration of apex, left cavernous, tuberculosis upper lobe, disseminated lesions throughout lower lobe. Infiltration of vocal cords. Under hygienic, dietetic and specific treatment the temperature improved and she gained 11 pounds in weight. The cough, expectoration and physical signs remained about the same. X-ray showed darkening of right field at apex. Left field showed a dense shadow to third rib, then a lighter area, then a dense area to costal margin indistinguishable from the heart shadow. Sept. 9 800 cc. nitrogen were introduced in left side, causing some pain and was followed by temperature to 100° for two days. Cough and expectoration were worse, then became better than before inflation, temperature dropped to normal. Three pounds were gained during the following week. The case is too early to report farther.

To briefly summarize our year's work, sixteen cases (see foot note) have been under treatment, in which 75 inflations have been done. We have experienced one gas embolism and one effusion.

Class I. One hopeless case, died before a pneumothorax could be induced.

Class II. One case, no space could be found. Patient's condition the same.

Class III. Seven patients. In three the treatment was discontinued on account of inability to establish a complete pneumothorax, but all enjoyed improvement. Of the remaining four under treatment, two are uncertain and two are improving.

Class IV. Seven patients. Three are apparently well and five are making good recoveries.

These results are very encouraging, inasmuch as in many cases it was the last resort. We by no means advocate this method of treatment in all cases of tuberculosis, but in certain cases it will bring about favorable results where other measures fail, and we feel that artificial pneumothorax is a valuable aid to modern hygienic, dietetic and specific methods of treating pulmonary tuberculosis and some other lung diseases.

In conclusion, I have great pleasure in expression of my appreciation to Dr. Geo. Cathey for much valuable assistance given in carrying out the work.

FOOT NOTES.

Notes, October 16, 1913.

Case 2, Class III. On Sept. 26, 150 cc. nitrogen were introduced in left seventh intercostal space, anterior-axillary line, and 250 cc. introduced at eighth intercostal space, mid-axillary line. Patient experienced much pain due to adhesions but the sputum was reduced. On Sept. 29, 200 cc. were introduced in the site of the 250 cc. introduced on Sept. 26; much pain was experienced. Oct. 8, 400 cc. were introduced in same place followed by further improvement. Patient considers herself better in every way; coughs and raises very little.

Case 4, Class III. Numerous attempts to find satisfactory free pleural space has been in vain. On Sept. 25, another attempt was followed by a "pleural eclampsia" lasting one-half hour, but followed by perfect recovery. Patient is four months pregnant and further attempts have been abandoned.

Case 5, Class III. Sept. 24, 400 cc. nitrogen were introduced. Temperature reduced to 100-101° in afternoon, sputum about the same. Oct. 3, 740 cc. nitrogen, followed by temperature of 102° for two days and since then has been under 100°. Patient is better in every way and prognosis is very good.

Case 1, Class IV. Lung has completely reexpanded and appears normal. X-ray shows dense scar at site of cavity, patient neither coughs nor expectorates, club fingers have disappeared.

Case 3, Class IV. Patient now walking around, no cough or expectoration, normal temperature.

Case 6, Class IV. Temperature now normal, cough and expectoration almost gone. Patient is allowed to sit up.

Four additional cases have now been done which will be reported later.
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TUBERCULOUS PERITONITIS.*

By A. C. Behle, M. D.
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St. Mark's Hospital.

By tuberculous peritonitis we refer to certain changes, mainly of a chronic nature, produced in the peritoneum by the tubercle bacillus. These changes are characteristic. They are diffuse and extend over the whole peritoneal surface. We must differentiate this condition from localized tuberculous peritonitis which is in the immediate neighborhood of tuberculous organs, as in tuberculosis of the intestines, vermiform appendix, ileocecal tuberculosis, tuberculosis of the female genitalia and tuberculosis of the mesenteric glands (so-called tabes mesenterica).

The principal change in the peritoneum brought about by the tubercle bacilli is the formation of granulation tissue. This is found in stages varying from a miliary tubercle to large infiltrating masses which, sooner or later, lead to caseation. In most cases tuberculous peritonitis is accompanied by a marked exudate. This may be serous, hemorrhagic, purulent or fibrinous in character. The fibrinous exudate, possessing a marked plastic nature, forms adhesions to the abdominal contents, resulting in scar tissue and contractions.

Probably the best classification of tuberculous peritonitis is:

(1) The exudative, serous form. In this there is mainly a serous exudate with few adhesions.

(2) The adhesive, fibrinous dry form. Here there is very little exudate and many adhesions. There are also tumor like masses, with contractions.

(3) The caseous, ulcerating, purulent form. The adhesions are associated with abscesses and perforations.

Although this is an accepted classification, no sharp line can be drawn between these forms, as one easily grades into another.

Fritz Härtel, of Berlin, has recently collected statistics relative to the frequency of tuberculous peritonitis, as compared with other forms of tuberculosis. From 27,000 postmortem examinations, he found that from 3 to 5 per cent. of all bodies sectioned had tuberculous peritonitis.

At the surgical clinic at Marburg, in 1910, in 964 abdominal operations, Friedrich reports 18 cases of tuberculous peritonitis, or 1.9 per cent.

Caird, in Edinburgh, in 1912, reports, in 6366 patients in the surgical clinic, 31 cases of tuberculous peritonitis, or 0.5 per cent.

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*Read before the Twenty-first Annual Meeting of Idaho State Medical Association, Pocatello, Ida., Oct. 9-10, 1913.

Naturally the clinical diagnosis is not as certain as the autopsy findings. Two-thirds of all reported cases are of the serous form, and one-third the adhesive, whereas only 1 per cent. of the cases are of the ulcerating, purulent form.

Frank, in 63 cases, found the serous form in 65.1 per cent., the adhesive form in 30 per cent. and the purulent 4.1 per cent.

Wunderlich, in 500 cases, found the serous form in 68.8 per cent., the adhesive in 27.2 per cent. and the purulent in 4 per cent.

The frequency of tuberculous peritonitis, in comparison to other forms of tuberculosis, has been worked out by Schlimpert, in Dresden. He reports, in 1911, that in 2173 tuberculous bodies, the peritoneum was involved in 4.9 per cent.

Albrecht, in Munich, also in 1911, in 2155 tuberculous bodies, found the peritoneum involved in 10 per cent. of the cases. The frequency apparently varies according to the domination of the sex, from 5 to 15 per cent. Of the organs affected by tuberculosis, Schlimpert further states that the peritoneum must be given third place.

The peritoneum is very seldom involved alone in the tuberculous process. The other organs involved, in order of frequency, are the lungs, the intestines, the kidneys and the pleura. A great variation is shown in the association of genital tuberculosis in the male and female. While in the male only 4 to 9 per cent. of tuberculous cases also have tuberculosis of the genitalia, in the female 30 to 45 per cent. are so associated.

Tuberculous peritonitis is a disease of youth and middle age, the majority of the cases being found between the ages of 25 to 40. Osler found most of the cases between 20 and 30 years of age. Pathologists find both sexes about equaly involved, whereas the surgeon finds many more cases in the female. My cases have been much more frequent in the female, fully five to one. This is probably accounted for from the fact that so many cases are found associated with tuberculosis of the female genitalia. The prognosis being especially good in this class of cases and the fact that so many cases heal of themselves and never go to autopsy, accounts for the difference in the statistics of the surgeon and the pathologist.

The peritoneum is seldom primarily involved with tuberculosis. Nothnagel states that the tubercle bacilli may wander through the bowel and eventually reach the peritoneum through the lymph channels and the retroperitoneal lymph glands. This certainly is infrequent. Boeshke states that the lung is the primary focus of infection in 88 per cent. of the cases. Albrecht, in 200 cases, has attempted to find the primary focus from which the peritoneum became involved. His conclusions were:

	Men. Per Cent.	Women. Per Cent.
Lungs	56.4	46.1
Glands	15.5	20.8
Intestine	12.6	7.7
Genitalia	0.7	12.1
Bones	1.5	3.3
Pleura	3.7	3.4
Tuberculosis of serous membranes	9.6	3.3
Unknown	0.7	3.3

In considering the etiology of tuberculous peritonitis we must bear in mind two facts: first, the predisposition; second, the infection. Infection is seldom congenital. In almost all cases the infection is extrauterine. Hamberger, of Vienna, claims that almost all forms of tuberculosis are acquired in the first ten years of life. An immunity is then established, the bacteria becoming inactive. This immunity from various reasons may later be lost and the bacteria again become active. This is well illustrated by one of my patients.

Mrs. N., while nursing her child, suddenly had an enlargement of the cervical glands on the left side. By weaning the child, living an out-of-door life and taking tonics these enlarged glands subsided. Three years later, after a spring house cleaning, she had acute pains in the region of the cecum. After consultation with Dr. Worthington a diagnosis of acute appendicitis was made, and the appendix removed. The appendix was covered with fine tubercles and a tuberculous ulcer, one-fourth of an inch in diameter, was found at the base of the appendix.

Later ascites developed. A median abdominal section was performed and a general tuberculous peritonitis found. The fluid was carefully sponged out, the abdominal contents exposed to air and direct sunlight for some minutes. Recovery was uneventful and rapid. Good health was enjoyed for over a year. A tuberculous pleurisy then developed, requiring aspiration. By means of open air life, regulation of diet and tonics she recovered.

Three years later a gland, just above the clavicle on the left side, became enlarged and rapidly broke down, requiring incision and curretting. Recovery followed under her former regime. Several months later, after neglect of her hygienic life, the gland reopened and discharged. In this case the immunity was certainly very unstable. The sinus on the neck is healed at the present writing. She has gained in weight and feels well. The abdomen and chest, as far as I can observe, are perfectly normal, although eight years have elapsed since the operation on the peritoneum and chest. How long will this immunity last, and what organ will next be involved, is my anxious query.

A tendency to tuberculosis can be inherited or acquired. The tendency can be transmitted by the mother to the child through certain toxins. The infection in the human being is almost always by inhalation, yet it can occur from infection of the intestines, through the milk of tuberculous mothers or tuberculous cows.

Eisendrath, at the Sixth International Congress on Tuberculosis, reported a case, in a relative, where the infection was from butter from tuberculous cows. He thinks that in separating the cream from the milk the tubercle bacilli are very apt to remain in the cream. We must bear in mind that tuberculosis can be conveyed through the vagina, uterus and tubes by the sexual act or otherwise.

In considering the mortality we must consider how often this is due to the tuberculous peritonitis and how often due to the associated complications. According to Schlimpert tuberculous peritonitis of itself causes death in only about 8.3 per cent. of the cases. The majority of the patients, 87.9 per cent., die of general tuberculosis and 12.1 per cent. from concurrent diseases. These conclusions, it must be remembered, are from autopsies and have no regard for cases healed during life.

Death primarily may be caused:

(1). From ulceration as a result of the toxins. This ulceration may cause intestinal fistula, inanition, chronic suppuration or mixed infection.

(2). From the mechanical action of the ascites.

(3). From obstruction of the bowels through strangulation or narrowing of the lumen.

(4). From perforation peritonitis.

Tuberculous peritonitis usually runs a chronic course. It can, however, begin very acutely or have acute exacerbations during its course. Acute beginnings are usually found in children with symptoms simulating appendicitis, typhoid fever or a pneumococcic peritonitis. The most marked symptoms are distention of the abdomen, due to meteorism or effusion and general cachexia.

In the serous form we find more or less ascites which is usually circumscribed. In the adhesive form we find, from the intestinal and omental adhesions, circumscribed, round or drawn-out swellings. I have found these especially present in the upper part of the abdomen above the umbilicus. Often these can only be felt as a vague resistance to the palpating fingers. In the majority of cases there is tenderness upon pressure which reflexly causes a tenseness of the abdominal muscles, but never with as marked a resistance as is found in acute peritonitis. The complaints on the part of the patient are not many. There can, however, be severe attacks of abdominal pain. Women often complain of distress in the urinary bladder. Howard Kelly lays great stress on these symptoms in tuberculosis of the female genitalia. Fever is not present in all cases. Should there be a rise of temperature, it indicates a rapid progress and usually has a bad prognostic significance. Vomiting is also found in the more rapid forms or in the acute exacerbations. Ascites can sometimes assume enormous proportions, as was shown in a recent case.

Mrs. S., in January of this year, while in California, had a diagnosis made of pregnancy. Waiting the usual nine months, with no change, she consulted me. My diagnosis was a probable tuberculous peritonitis. The ascites was very marked and produced a great deal of distress in breathing. An exploratory puncture relieved the patient of 130.00 cc. of a straw colored fluid, with a specific gravity of 1018. It contained a large percentage of albumin. An excess of mononuclear cells was present. She was kept quiet for a time but the fluid rapidly accumulated. A median abdominal section was performed and the fluid thoroughly removed by sponging. Large tubercles with many adhesions were present. This was the mixed form of serous with adhesions. The abdomen was irrigated with a 1 to 1000 solution of formalin, thoroughly sponged out and closed without drainage. By means of an open air life, with rest in bed for the first month, she made, except for a small tuberculous ulcer at one end of the incision, a good recovery. There has been no recurrence of the ascites and she has gained in weight and feels well.

The ascites in many cases has a bad effect on the pulse and respiration. In the adhesive form of tuberculous peritonitis we may have acute or chronic obstruction of the bowels.

In making a differential diagnosis we must divide our cases into the acute and chronic forms. In the acute cases we must differentiate from appendicitis, typhoid fever and pneumococcic peritonitis. Many cases have been reported where the diagnosis was not made until the abdomen was opened.

In the chronic cases we must differentiate from idiopathic peritonitis, pseudo-tuberculosis of the peritoneum, cirrhosis of the liver, carcinoma and sarcoma of the peritoneum, hereditary syphilis, tuberculosis of the mesenteric glands, iliocecal tuberculosis, genital tuberculosis and tumors. In chronic and idiopathic peritonitis the process is mainly localized. It is generally caused by injuries, inflammation of neighboring organs or through fecal impaction.

Pseudo-tuberculosis is a process very similar to tuberculosis. It, however, is due to intestinal parasites or to some foreign particles as starch granules or seeds, from a perforation of the stomach, although it may be produced by cholesterin crystals, meconium, etc. In liver cirrhosis the enlarged spleen and icterus may help to differentiate, yet we must bear in mind how often tuberculosis of the peritoneum and cirrhosis of the liver are combined. Bircher states that 10 per cent. of all cases are associated with liver cirrhosis.

In tuberculous peritonitis the ascitic fluid contains large numbers of lymphocytes, whereas in cirrhosis of the liver endothelial cells are present. Inoculation of guinea pigs with the fluid will differentiate the conditions.

In syphilis the Wassermann reaction will aid us.

Carcinoma of the peritoneum may be impossible to differentiate. The age of the patient should be remembered.

Ovarian cysts, hydronephrosis, splenic tumor and fecal impactions must be thought of in the diagnosis.

Tuberculosis of the mesenteric glands are relatively frequent in children but seldom diagnosed. The symptoms are attacks of pain, digestive disturbance and emaciation. Usually in the right side of the abdomen a nodular, tender, almost immobile mass is found. Tuberculous peritonitis may be associated with the above condition. The resistance of the abdominal wall or the effusion are not found in tuberculous mesenteric glands.

An examination of the exudate in tuberculous peritonitis shows a high specific gravity and a larger quantity of albumin than in the transudate. Tubercle bacilli are very seldom found in the fluid, although inoculation into a guinea-pig is successful in over 50 per cent. of the cases. Transplantation into a guinea-pig of a portion of the peritoneum that has been removed is almost always positive. Perhaps with the antiformin method of treating the tissue we will more often have positive results in isolating the bacilli.

The tuberculin reaction I do not believe can be of help in the diagnosis. My opinion coincides with those who consider the reaction as one of immunity. In other words, a person reacting to tuberculin has a certain amount of immunity against the tubercle bacilli established in his body. This immunity is probably due to some previous infection. I have seen severe tuberculous affections fail to react to tuberculin, whereas a slight healed tuberculous affection will cause a marked reaction.

In giving a prognosis we must first consider the involvement of other organs with tuberculosis, as this very markedly influences the prognosis. The ascitic form has shown the best prognosis, whereas the purulent is the worst. In children, with the exception of infants, where the prognosis is decidedly bad, the prognosis is better than in adults. Marked febrile cases, as I stated previously, are more severe than those without.

In former years this disease was treated entirely by the internist.

In 1862 Spencer Wells, under an erroneous diagnosis of ovarian cyst, operated on a case. The abdomen was immediately closed and the case recovered.

König, in 1884, stimulated by the case reported by Spencer Wells, was the first to formally advise operation. In 1889 he reported 131 cases with a recovery of 70 per cent. Because of the enthusiasm of his followers these cases now became mainly surgical.

The pendulum, in 1900, again began to swing backward when Borchgrevink impressed upon the profession that many cases healed spontaneously. Although it has been shown that cases can and do heal spontaneously, yet we must not forget the very good results that have been shown by the surgeon.

J. B. Murphy, in 1904, called the attention of the profession to the fact that the fallopian tube was often a primary focus of infection and, therefore, must be removed for permanent results. When the appendix vermiformis or mesenteric glands are the primary focus they should be removed.

W. J. Mayo, in 1905, in a report of 144 cases, showed the profession that better results are secured by the removal of the primary focus. Cases in which there had been several relapses and several reoperations were cured by this means. This places the surgeon's work on a more rational basis and in line with other surgical, tuberculous conditions.

What, today, are the indications for the operative treatment? Fritz Härtel has recently collected the opinion of many noted surgeons, and has placed the following as the proper indications:

(1). To verify the diagnosis.

(2). To remove the ascites.

(3). To remove infected organs and relieve bowel obstructions.

(4). Abdominal section as a curative measure in tuberculous peritonitis.

(5). Social indications by the hastening of the healing process for the end results.

That we cannot always make a positive diagnosis is certain. The differential diagnosis for malignant conditions, especially, is almost impossible. Hence many cases come to operation that could not be treated conservatively. The radical removal of the ascites in many cases is imperative and, since the exploratory incision is no more dangerous than the trocar, we should, when possible, perform a laporotomy. Intestinal tuberculosis, mesenteric gland tuberculosis and genital tuberculosis can often be radically removed. Obstructions of the bowels must be relieved by resection of the intestines or by enteroanastomosis.

As contraindications we must consider florid tuberculosis of other organs and severe pulmonary tuberculosis. Children only one year of age should not be operated upon. Mayo's advice, to make a median incision below the navel in the female and over the appendiceal region in the male, is good.

Incisions, in the beginning, should not be over two inches in length and, if necessary, may be enlarged later. Be careful of adhesions, as the intestine can very easily be injured. If the bowel should be injured, sew up at once, bringing broad surfaces in apposition.

Empty the abdomen of all exudate, with the help of the side position if necessary. The residue can be removed by sponging.

Drainage was first advocated by Miculicz but most surgeons have given it up. Howard Kelly, in his Operative Gynecology, has diagrams showing a more rapid convalescence by the immediate closing of the abdomen. A. J. Ochsner (Clinical Surgery, Ochsner & Percy, 1911) advocates and claims good results with drainage. My cases have all been closed at once. The greatest care with asepsis should be used to prevent mixed infection. Should defects in the peritoneum occur, close or cover them carefully, to avoid fecal fistula. Many authors rub iodoform over the surface of the peritoneum, others use a suspension of same in glycerine (50 to 100 gms. of a 2 to 5 per cent. suspension).

Irrigation of the peritoneal cavity with weak formalin solution, or weak iodin solution, is recommended by many. I have used the former with excellent results. A. Hoffman has painted the parietal as well as visceral peritoneum with 10 per cent. tincture of iodin. He reports four cases with rapid healing. The iodin produces a chemical peritonitis which lasts 48 hours. This is associated with marked tenderness and sometimes vomiting, but without febrile reaction or meteorism. The observation was made that in the dry forms of tuberculous peritonitis the peritoneum reacted with ascites, whereas in the ascitic form the ascites did not return. Personally, fearing the intense adhesions that I have seen produced in the abdominal cavity of a dog by iodin, I have not had enough courage to follow this method. I have, however, irrigated the abdominal cavity several times with a 1 to 1000 formalin solution with excellent results, the fluid always being carefully removed.

In every case general treatment to increase the resistance on the part of our patient against the tubercle bacilli and other products is as important, or even more so, than the surgical treatment. Continuous living in the open air, sunlight, and rest in bed are very important. This is especially true in the beginning and when there is a febrile temperature. The bed should be in the open air, in a dry, high, warm climate. The stimulating effect of rarefied air cannot be overestimated. The difficulty of remaining out of doors in damp or rainy weather makes our climate ideal, notwithstanding our friends on the sea shore.

Diet is next in importance. A non-irritating diet should be given, with an abundance of fat, as cream, olive oil, ripe olives, etc. In severe ascitic cases a diet free from salt should be given, as it has been shown that blood somewhat deficient in salt will abstract salt from other places. By this means salt, and along with it fluid, will be absorbed from the peritoneal cavity and carried to the kidneys, to be removed by diuresis.

Internal medication plays a much lesser role in the treatment of these cases. Some form of iodin is, at times, beneficial. The syrup iodid of iron is preferable. Recently the Italians have advocated subcutaneous injections of iodin, iodid of potassium and guaiacol in combination. They claim excellent results. In intestinal complications guaiacol and creosote are valuable. The use of tuberculin is still advocated by some and condemned by others. Sahli, especially, is an advocate of tuberculin. Some cases are certainly benefited. Minute doses and rest in bed must be insisted upon.

Swiss therapeutists have been doing excellent work with the treatment of these cases with sunlight, claiming that the high altitude with the sunlight is beneficial. This treatment should appeal to the profession in the Rocky Mountains. Here we have a much more intense sunlight than in Switzerland. Dust and fogs which interfere with the sun's rays are also absent here. It has been shown that on Mont Blanc, in Switzerland, only 6 per cent. of the rays are obstructed in this way, whereas at sea level 25 to 30 per cent. of the rays are obstructed.

The good results are due to the bactericidal effect of the rays, the favorable effect on the metabolism, the local hyperemia and the increased resistance. In those cases marked by increased pigmentation (browning) of the skin the best results seem to follow. Rollier, by means of sunlight alone, has had excellent results with the treatment of all tuberculous cases. He reports five cases of iliocecal tuberculosis, in which four cases were entirely healed and one markedly improved. This report should impress upon us the value of our climate and sunlight as accessories to the surgical treatemnt of these cases. In localities where it is impossible to get an abundance of sunlight the Röntgen rays will act as a good substitute.

SUMMARY.

Every case of tuberculous peritonitis should (as in all surgical tuberculosis) be treated by energetic, hygienic and dietetic measures.

1. Climatic conditions in the Rocky Mountains are the most favorable in the world for tuberculous cases.

2. In a certain number of cases operation is absolutely necessary.

3. In some ascitic forms the cases can be better treated conservatively, especially in the beginning. Should ascitis not diminish, surgical measures will hasten results.

4. The ulcerative form gives a very bad prognosis.

5. All patients, when they have recovered, must continuously keep up their general resistance by out-of-door life and general hygienic measures.

6. Under certain conditions, as in measles, influenza, pregnancy, etc., the immunity is easily destroyed.

GYNECOLOGIC TUBERCULOSIS.*

By E. M. Welty, M. D.,
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When asked to present a subject before this society several definite reasons prompted me to select gynecologic tuberculosis.

First, in large institutions with a wealth of clinical material, where many autopsies are performed every year, a surprisingly large number of unsuspected cases of genital tuberculosis is found.

Second, the frequency with which this condition is met in surgical clinics in cases wholly unsuspected, or in cases operated upon for some other more common form of pelvic trouble, or in cases of exploratory laparotomy for diagnostic purpose.

Third, to report a case referred to me, supposedly suffering from a recurrent attack of appendicitis.

Fourth, the apparent indifference with which gynecologic tuberculosis is treated, both by some writers of note and the profession at large.

Tuberculosis of the female organs of generation, associated often with the same disease of the peritoneum, occurs with sufficient frequency to call attention of the profession to this subject, hoping by such consideration that more of the cases coming under our observation will be recognized sufficiently early to enable us to employ the well recognized measures of relief, both surgical and medical. One can scarcely imagine a case so desperate which at one time was not simple and could readily have been dealt with.

No doubt there are cases, both of miliary tuberculosis, in which the tubercles are all microscopic in size, and of chronic, diffuse tuberculosis in the early stages, that are not recognized as such; and, therefore, after the removal of a harmless appendix our patient does not obtain the desired relief.

Some idea of the frequency of genital tuberculosis can be gained by the extensive statistical study of the occurrence of tuberculosis of the peritoneum and the urogenital system in the female by Schlimpert (*Archiv für Gynakologie*, 1911, XCIV, 863) who has studied for this purpose the records of 3514 autopsies. He found macroscopic evidences of tuberculosis of some organ or organs in 2,173 of these bodies, and in no less than 29 per cent. of them was a tuberculous process to be considered the cause of death. The lungs were involved in 84 per cent. of all tuberculous cases. The intestine was found to be the next in frequency with 32 per cent. involvement, then the peritoneum with 5 per cent. and the genital system with 3½ per cent. Of all tuberculous cases, 73 of the 2,172, genital involvement occurred chiefly from the twentieth to the thirtieth year.

The relative frequency of the organs attacked is as follows: The tubes fifty-one times altogether, alone twenty-one times; the uterus forty-one times altogether, and eleven times unassociated with involvement of other genital organs; the vagina seven times. In all these it was the only portion of the genital tract affected. The cervix three times, always in conjunction with severe general tuberculosis affecting other portions of the genitalia; ovarian tuberculosis ten times, only twice unassociated with disease of one of the other genital organs. In nearly all of the cases tuberculous processes appeared in other parts of the body beside the genitalia.

Another postmortem study, also appearing in *Archiv für Gynakologie*, is by Simmonds, covering 6,000 autopsies on female bodies. In this series macroscopic tuberculosis of the genitals was found in 80 cases or 1.33 per cent. Schlimpert's cases of genital tuberculosis constituted 2 per cent. of all cases examined.

In 6,000 autopsies at Parma, tuberculosis was found the cause of death in 1360, 172 of these being females with genital involvement, 12.6 per cent. The more recent and painstaking studies, including microscopic sections, of Stolper and Posner place genital tuberculosis at from 18 to 30 per cent. of all bodies autopsied. Further light is thrown on the frequency of genital tuberculosis by a systematic examination of specimens removed.

König, in a report based on his own and other collected experiences, estimates that an average of 10 per cent. of all adnexal inflammations will show tuberculosis. Williams, in 91 cases of adnexal disease, found 8 per cent. to be tuberculous.

With reference to predisposing causes of genital tuberculosis, particularly tuberculous salpingitis, all investigators agree that hyperplasia, aplasia, pregnancy, gonorrhea and syphilis predispose to tuberculosis of these organs. The tubal mucosa, once changed by a gonorrheal inflammation, furnishes an excellent soil for the colonization and proliferation of tubercle bacilli. The frequent development of tuberculous salpingitis following puerperal infections is also noteworthy.

PATHOLOGY.

Most authors speak of at least three forms of the disease. (1) Miliary. (2) Chronic diffuse or caseous. (3) Chronic fibroid. Some authors speak of six or seven varieties, an unnecessary confusion of distinctions. They are all one and the same disease and present simply different stages, either in the advancement or the arrest of the process.

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*Read before the Twenty-fourth Annual Meeting of the Washington State Medical Association, Everett, Wash., July 14-16, 1913.

The first, or miliary, is the acute form, and is usually associated with general miliary tuberculosis, although it may occur as a primary condition. This is the initial lesion of all other forms, the tubercles being scattered over the mucosa or serosa, situated usually just beneath the epithelium. In the very early stages the tubercles are microscopic and present a macroscopic inflammatory condition, similar to any infection and, therefore, most difficult of recognition. Should the disease advance, then the caseous or chronic diffuse form presents itself; the tubercles increase in size, coalesce, break down, and form irregular ulcers with elevated and undermined edges, invading the deeper tissues and finally replacing the physical elements of the organ affected. This is the destructive form and would indicate a violent infection, a diminished resistance, or both.

In tubal tuberculosis, the organ frequently becomes tortuous and distended with caseous material. If the fimbriated extremity remains patent, or if the ulcerative process so weakens the wall as to occasion rupture and soiling of the peritoneum, then we have recurrent attacks of peritonitis, simulating recurrent appendicitis.

In the third variety, or chronic fibroid tuberculosis, according to Williams, there is an excessive formation of fibrous tissue in and between the tubercles. There is but a slight tendency to caseation, the most marked feature being the chronicity and, no doubt, indicates in some instances the spontaneous healing of this affection, just as occurs in other organs, notably in the fibroid phthisis.

SOURCE OF INFECTION.

Tuberculosis of the female gentalia may be either primary or secondary. By the former we understand that the focus in the genital organs is the only one in the body. The latter is secondary to some pre-existing focus elsewhere.

Primary genital tuberculosis is vigorously denied by many observers in spite of at least three significant facts: first, otherwise healthy and strong individuals have primary genital manifestations; second, after removal of the local focus patients get well and remain well for years; third, in Simmonds' series of eighty cases, previously referred to, of genital tuberculosis, there were four cases primary, two of the uterus alone, one of the tubes alone, and one both of tubes and uterus.

The secondary form, much more frequent than the primary, is often found in phthisis. Stolper, in 34 autopsies in cases having died from pulmonary tuberculosis, found pelvic tuberculous lesions in 20.5 per cent.

The possible sources of infection in the primary form are, according to Hegar, first, penetration of the germs from the outside directly to the mucosa of vagina, uterus and tubes and finally to peritoneum and ovaries; second, penetration of the germs through minute breaches of continuity in the genital tract, into the lymphatics, thence into the fallopian tubes directly against the lymph current, or by way of the pelvic peritoneum into the tubes at the fimbria.

In one of Simmonds' cases of primary genital tuberculosis, the husband died of phthisis six months before her death. In another of the four primary cases mentioned, a double tuberculous salpingitis began its development a few weeks after marriage with rupture into the peritoneum and rectum. These cases are strong evidence of a primary infection from without.

In the secondary form the infection may arise from neighboring anatomic structures; more often it comes from the peritoneum. This was true of seven of Schlimpert's cases.

Simmonds concludes that in the vast majority of tuberculosis of both peritoneum and genitals the process in the genitals is the primary condition, while Murphy believes that infection in a tube occurs more commonly through the peritoneum or through the uterus, and that tuberculosis of the uterus is a more frequent lesion than is generally believed. The sources of infection in general are classified as by the blood, lymphatics, contiguity of tissue and continuity of surface. By reason of the much more frequent involvement a study of genital tuberculosis resolves itself into a consideration of this affection of the fallopian tubes, uterus and peritoneum.

SYMPTOMATOLOGY.

The symptoms alone of uterine tuberculosis are of no diagnostic value unless they are associated with tuberculosis elsewhere in the body, or unless there is a discharge of cheesy material, together with constitutional symptoms. Menstruation may be regular, suppressed or profuse, there usually being some disturbance of this function. A persistent and profuse leucorrheal discharge of uterine origin in young girls should be suspected of tuberculous origin and a careful examination of the discharge instituted. If these be negative, curetment may be done to determine the presence of bacilli. According to Still, 9.5 per cent. of tuberculous girls under twelve years of age have genital involvement.

The symptoms of tubal tuberculosis are in general those of salpingitis, to which are frequently added those of pelvic peritonitis. In cases of simple tuberculous infections of the tubes, the fimbriated end is, as a rule, not closed; in Neisserian and other pyogenic infections, the reverse obtains, the fimbria being sealed. In pure infections there is a marked periodicity of the attacks, accompanied by all the manifestations of a pelvic peritonitis, namely, soreness, pain, elevation of temperature and rigidity of overlying muscles. These attacks are due to expulsion of tuberculous material from the tubes into the peritoneum.

The early diagnosis of genital tuberculosis is not an easy matter, the early invasion being seldom brought to our notice. Pain, which is a prominent factor in bringing patients to us for relief in other abdominal affections, is slow in making its appearance and seldom becomes prominent enough to compel patients to seek relief until much advance has been made. In the early stages nothing can be gained by a physical examination, aside from eliciting an undue tenderness. Later enlarged tubes, a boggy uterus or an enlarged and tender ovary may be outlined, yet none of these are necessarily an indication of tuberculosis.

If the infection be an ascending one with deposits in the vaginal tract, or should the cervix present an infiltration or an erosion which does not readily bleed, the diagnosis is more easily made; the presence of tubercle bacilli in these secretions and erosions at once clears up the case.

Shoop concludes that in an unmarried patient and a virgin the chances are 90 per cent. in favor of a tubal enlargement being tuberculous, provided that gonorrheal infection can be excluded, especially if the pain be not markedly severe. Under the same conditions, the chances are nearly the same for an endometritis being tuberculous.

The family history of a patient may prove the existence of a tuberculous tendency. Tuberculosis in the husband can always be looked upon with suspicion and should suggest a possible connection between his condition and the enlarged tube or the endometritis in the wife.

As a confirmatory diagnostic agent, the tuberculin test in some form is of much assistance. While an occasional test in a patient with an irritable or very delicate skin may present a rash similar to the usual eruption, and in whom no tuberculosis can be ultimately demonstrated, so valuable an aid should not be set aside as worthless. The absence of a reaction in one or more of the several tests carefully carried out is pretty certain evidence that tuberculosis does not exist.

The most confirmatory diagnostic sign is the peritoneal involvement of Douglas' pouch. In typical cases the tubercles may be palpated on the posterior uterine wall, and by rectovaginal examination in the posterior leaflet of Douglas' pouch.

In exudation cases, and in those of tubal enlargement with adhesions about the vaginal vault, fluid may be withdrawn and animal inoculation made subcutaneously. In that manner the tubercle bacillus in positive cases can be recovered from neighboring lymph glands in the guinea pig in two weeks.

TREATMENT.

In respect to the treatment of genital tuberculosis there is a wide difference of opinion, some recommending the removal of only those organs and parts of organs which are so thoroughly diseased that healing seems impossible. Many recommend the removal of ovaries, tubes and even the uterus, providing the general condition of the body will permit of such operation. The existence of lesions elsewhere in the body, even in the lungs, is not considered by many as sufficient contraindication for operation. On the other hand, the champions of conservative treatment argue that the primary mortality is high, that the disease in itself is not deadly, that operative interference seldom removes the focus of disease, that the shock of the operation, the loss of blood and the necessary interruption of food ingestion with post-operative nausea, vomiting and other digestive disturbances, all tend to further diminish the resistance of tuberculous patients.

That judicious, surgical treatment of selected cases of genital and peritoneal tuberculosis is efficient is shown by Baisch's report of 110 cases at Doderlein's clinic. He shows that four years is usually required to determine a cure. Forty of the cases died, either primarily or during the first four years, making a total mortality of 30 per cent. After four years from time of treatment there were no deaths. This gives a percentage of cures by surgical means of 70, while the average proportion of cases when internal treatment alone is employed, is about 33 per cent. as shown by the statistics of Rose from Naunyn's clinic.

In Baisch's series of 110 cases forty-five had tuberculous disease of the tubes; thirteen were treated without operation; thirty-two were operated upon. Of those expectantly treated, eight died; in four of these the tuberculous process was far advanced and operative interference would have been useless; four had pulmonary and pleural tuberculosis. Of the five patients benefited only one is subjectively and objectively cured; the four expressing themselves as benefited still have adnexal masses on both sides. Of the thirty-two cases operated upon nine died, four at the time of operation, five from three months to two and one-half years subsequent to operation; four still complain of symptoms, but objectively are much benefited; in six others the pain has all disappeared, and are fully capable of work but new inflammatory masses have developed. The author concludes that there is a relatively small tendency to spontaneous cure of tuberculosis of the tubes.

The extent of the operation varies with different entirely healthy. In none of the cases of this author's experience was there a recurrence when the uterus was left. On account of the increased mortality, most operators stop short of hysterectomy. satisfying themselves with the removal of the tubes by means of the wedge shaped incision.

REPORT OF CASE.

Mrs. B. B., age twenty-four, suffering from what was diagnosed a recurrent attack of appendicitis, was referred to me by her physician in Freeland, Pa.

The patient was at once admitted to the hospital and an examination made. She did not appear seriously ill, temperature 101°, pulse 115, with a history of more or less fever for a week or ten days. She complained considerably of pain; menstruation was profuse, irregular and painful; intermenstrual periods often quite free from pain. She gave a history of several distinct attacks of pelvic pain, extending over a period of eighteen months, each succeeding attack becoming more severe. The abdomen was slightly distended, with marked tenderness and more or less muscular rigidity all over the lower portion. On vaginal examination a distinct mass could be felt filling the right pelvic cavity. The uterus, tubes and adjacent structures were all extremely painful to touch.

A diagnosis of bilateral salpingitis with a probable appendicitis was made. The patient was prepared for laparotomy the following day (March 10. 1908), at Medico-Chirurgical Hospital, Philadelphia. On opening the abdomen a small quantity of serous fluid escaped. The mass on the right side proved to be an elongated and much thickened tube with adhesions to ovary, coils of intestines and uterus. In this region were numerous tubercles scattered over tube, adjacent coils of intestine, appendix and peritoneum; the opposite tube was also found involved, presenting fewer adhesions but a considerable amount of the debris. The coils of intestines were readily liberated from the right tube which, together with the ovary and appendix, was removed. The left tube was also removed and the ovary resected. Both tubes were perforated by one or more ulcers. After removal of much tuberculous debris from the pelvic cavity, the abdomen was closed without drainage. The patient left the hospital at the end of three weeks with a temperature practically normal, the rigidity and tenderness having largely disappeared. She gradually regained her former weight and strength, until four months after the operation she began to do her own housework.

I report this case because it no doubt is one of primary tuberculous salpingitis, primary in the sense that there was no demonstrable lesion elsewhere in the body. This view of the case is also substantiated by the fact that she is and has remained clinically free from tuberculosis for at least four years. Since then she has passed from my observation.

EMERGENCY INCUBATOR.

By Frank Chappell, M. D.

GRANITE FALLS, WASH.

I find in practice we sometimes have cases of premature birth in which it seems possible to save the life of the child if we could easily and quickly assemble an incubator with heat and ventilating conveniences. I have used in such cases with good results the following simple apparatus, wherever an electric current is available:

One box, 18x24 inches, 10 inches deep, lined with cotton and glass covered, one electric heating pad with rheostat for three temperatures. Supply ventilation by having three or four one-inch holes in the end of the box about four inches from the bottom, this for the foot of the incubator. Then four more about three inches from the top of the box at the head end. Place the heating pad at the foot of the box so the air coming in will be warmed by passing over the pad. Supply the necessary moisture to the air by a damp sponge attached to the top of the box inside. Place thermometer in the box where it can be readily seen. Part of top of box should be covered with gauze to aid ventilation and part with glass so child can be seen at all times.

The best form of nourishment is mother's milk, about once in three hours. Can be given most readily with medicine dropper. In absence of electric current this apparatus can be used and heat supplied by hot water bottle, but it is so much harder to maintain the air at an even temperature this way and the maintenance of even temperature seems to be an essential point for success in our efforts.

I wish to call attention particularly to the fact that the child in uterus is in a nearly constant temperature of 98° F. and I believe the nearer this temperature is maintained with necessary moisture in the air the more successful will be our effort to save these children.

EUROPEAN TOUR FOR 1914.

A sixty-day tour of the well-known European surgical clinics is being arranged under the auspices of the Georgia Surgeons Club, to close with the meeting of the Congress of Surgeons of North America in London the latter part of July, 1914. Representative surgeons are invited and may secure details of the trip from the secretary, Dr. R. M. Harbin, Rome, Georgia.

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon, Washington, Idaho and Utah.
Devoted to the Interests of the Medical Profession of the Pacific Northwest.
Editorial Office, 719-22 Cobb Building, Seattle, Wash.
JANUARY, 1914.

EDITORIAL

NEW YEAR GREETINGS.

At the beginning of this new year our editorial management wishes to extend greetings and best wishes for the year to the profession of Oregon, Washington, Idaho and Utah, whose medical associations it officially represents and which looks to the three former as its owner and sponser. This begins the sixth year since these three state associations adopted it as its official journal, and the fourth since it has sustained a similar relation to the Utah association. This journal occupies a unique position among the medical publications of the country, in that it thus unites the interests, in a certain sense, of the physicians of four different states. That this relation has continued through so long a period is proof that there has been no discord or friction between the associations themselves or between any of them and the journal. This result has been a great source of satisfaction to the journal management and it is to be hoped that the same pleasing relations may continue for the future.

From the outset it has been the purpose to make the journal a medium of communication among the physicians of the states which it represents. To this end it has intended that questions of general or local interests should be discussed editorially by the representatives of the different associations or through correspondence from any physicians of these states on any subjects which may interest them. Although these objects may not have been attained to the extent desired, they are again at this time brought before the profession with the request that the pages of the journal may be utilized in any manner which may be of interest and profit to the medical profession of these states. While the bulk of space will, as heretofore, be devoted to the publication of the scientific papers of the different associations and societies, suitable space will be reserved for news items and a discussion of matters of interest to the profession at large or to the physicians of certain localities. The extent to which the latter purposes will be obtained will depend largely upon the activities of the local physicians who are interested in this form of medical publicity. We commend to our readers the suggestions herewith outlined and solicit their interest and cooperation. It might be invidious at this time to wish a year of financial prosperity to the medical profession of the Northwest, but we can unhesitatingly hope for a year of earnest work, of a high character, and of such a degree of scientific thoroughness as to bring a feeling of satisfaction to individual physicians and of success in the healing art that will be of lasting benefit to their patients and of enduring result to their own reputations.

A PREVENTABLE TYPHOID EPIDEMIC.

During past years there have been numerous instances in cities of the United States of typhoid epidemics caused by well proven infections of water supplies due to ignorance or carelessness. The wide-spread diffusion of knowledge concerning typhoid fever and its means of propagation has caused these epidemics to appear at rare intervals in more recent years. The state of Washington has now before it a most marked illustration of this sort of an epidemic. It has been stated by some writer that a typhoid epidemic at this day is a criminal occurrence, for which some one should be held guilty and punished accordingly. Such a comment is certainly applicable to the present typhoid epidemic at Centralia.

Here, in a city of 10,000 inhabitants, more than 300 cases of typhoid have appeared within a period of about three weeks, with sixteen deaths at this writing, and probably others to follow. The city's water supply is obtained within its limits from driven wells, bordering a creek which flows from the foot-hills through a farming region, draining a water-shed which is well populated. While ordinarily the water for these wells is filtered through the adjacent soil, an additional emergency supply is obtained from a pipe leading directly into the creek. Here are certainly ideal conditions for a typhoid epidemic, should a case of the disease appear in the water-shed. This was clearly the existing condition last month. That this epidemic was an unpardonable one is evidenced by the fact that the water-system was some time ago condemned by a State Board of Health official who demonstrated by personal tests that the water from the reservoir outlet, after passing through an ancient sand filter, contained many more bacteria than the water at the intake. In spite of warnings the dangerous condition was maintained until the present lamentable outbreak. This sitnation is not an isolated case; others exist more or less marked in many states, especially of the newer West. When the question is asked why such a recognized dangerous situation is permitted to exist, the only explanation is the money cost of installing a safe and suitable water-supply. In this instance the loss in money from this epidemic will probably be at least double what an adequate water-supply would have cost, not to mention the terrible death loss and the calamity of resulting sorrow.

There is one certain means by which such disasters can be avoided and prevented in the future. That is by legislative action which will place in the State Board of Health the power to condemn unsafe and inadequate sources of water-supply and to order the installation of modern, scientific water-systems. A bill with this object in view has been regularly introduced in every session of the Washington legislature for the past ten years, and has with equal regularity been killed by certain interests whose power was supreme. Will this object-lesson be sufficient to cause the passage of a suitable act at the next session of the legislature? That such a result is essential to the health and lives of the citizens is evident to the mere casual observer. The people will await with interest the answer to this question.

THE MENACE FROM PLAGUE.

A little over six years ago bubonic plague appeared in Seattle, causing six deaths. The city authorities, aided by the United States government, pursued a very vigorous campaign against rats, destroying a large number with a rapid disappearance of the disease among them. During the four years previous to last October, only three cases were found among rats and these all at one time. Consequently the interest in rat extermination has been reduced to a minimum among certain of the city officials and it has been with difficulty that the department of health has carried on the war against the rodents. Since the first of October, however, twenty-eight cases have been proven among the rats, more than were found during the previous six years. This condition constitutes a serious menace to the whole Northwest. It shows that the disease has a foothold in this city which only vigorous and continuous effort will eradicate. A discouraging feature of the situation is the indifference of some of the city officials, who profess to believe that no plague exists in the city and that the department of health is simply stirring up an uncalled-for excitement. At the same time there is the unfortunate disposition on the part of a portion of the business interests to conceal the facts and to minimize any possible danger. This is the identical situation which existed in San Francisco previous to the serious outbreak in that city. In the presence of any kind of an epidemic nothing is gained by the suppression of facts. They will eventually be disclosed and concealment simply serves to aggravate the existing dangers. Moreover, the Unted States government, by international agreement, is required to give wide publicity to conditions of this character, and will not minimize any facts, so that the presence of this disease in any one city is not a local affair but a national danger.

Thus far one patient has died, from whose spleen was obtained an organism morphologically identical with the bacillus pestis. Unfortunately the body had been prepared by the undertaker so the complete bacteriologic examination was impossible. This case, however, suffices to impress the fact that the disease among humans, almost with certainty, is present in the city. Future danger can be averted only by the united efforts of the city officials and general public in support of the work of the health department in vigorously carrying on the campaign for the destruction of rats and the rat-proofing of buildings. While the latter work has already been conducted on a large scale its complete carrying out has not been encouraged by some of the city officials, as is necessary to accomplish the desired results. While these facts have not appeared in the daily press, they deserve to be fairly stated.

MEDICAL NOTES

OREGON.

Annual Dinner of the Portland City and County Medical Society. This affair was held at the Hotel Oregon, Dec. 17, and was attended by a large number of physicians of the city. Dr. W. T. Williamson, the retiring president, delivered an address in which he attacked the attitude of people, like the Christian scientists, who fail to appreciate the efforts of the medical profession to ameliorate disease. He described the wonderful results of modern prophylactic treatment of typhoid fever as illustrated in the experience of recent years in the United States army. He spoke on numerous other matters of interest to the medical profession.

Portland and Rabies. In consequence of the city of Portland revoking the dog-muzzling order, the State Board of Health will no longer administer antirabies treatment free of charge to the general public. The board considers that, if the city is not sufficiently interested in suppressing the disease to keep its dogs muzzled, it will not go to the expense and trouble of administering the free treatment.

The State Board of Health. At its recent meeting the board elected Dr. E. B. Pickel, of Medford, as president; Dr. E. A. Pierce, of Portland, vice-president, and re-elected Dr. C. S. White, of Portland, as secretary. It was decided to employ persons to gather data throughout the state regarding cancer and consumption.

New Hospital at Dallas. The Dallas Hospital Association will immediately begin the construction of a new $10,000 hospital. This is the result of the deliberations of the association during the past year since its organization.

The Central Willamette Medical Society held its annual meeting at Albany, Dec. 11. Dr. O. R. Gullion, of Eugene, was elected president and Dr. G. S. Beardsley secretary-treasurer. Several interesting papers were read and resolutions were passed condemning hospital associations and lodge practice. Members who accept positions in either of these lines of work will be liable to expulsion from the society.

Dr. D. A. Paine, of Eugene, has recently returned from a trip to Cuba. Several months ago he left home, visiting his old home at Black Hills, where he practised before coming West. He gives many interesting descriptions and incidents of his visit in Cuba.

Dr. C. H. Smith, of Weston, was married in Portland, Nov. 26, to Miss Zola M. Sapp, of Olympia, Wash.

WASHINGTON.

Typhoid at Centralia. The typhoid epidemic last month at Centralia assumed large proportions in a short time, induced by an infected water supply. More than 300 cases appeared. While the authorities at first inclined to suppress the facts, it was soon determined that publicity was the best policy. Ordinary accommodations being insufficient for the multiplicity of patients, the armory was utilized as an emergency hospital. The State Board of Health freely administered antityphoid vaccination, giving the treatment to more than 3600 people. Universal precautions were taken to sterilize the water and the epidemic now appears to be checked.

New Hospital at Dayton. The residence of R. D. Sayres, of Dayton, has been leased by the Catholic sisters for a hospital and will soon be opened for that purpose.

Anti-Plague Measures in Tacoma. The city council of Tacoma last month adopted measures for the investigation of plague among the rats. Although the disease has not been proven among the rodents of that city, investigations will be undertaken to prove its absence.

Scarlet Fever in Everett. A mild epidemic of this disease has caused considerable alarm in Everett. While there has been talk of closing the schools this has not been considered necessary since the medical inspector reports that the disease is apparently checked.

New Hospital at North Yakima. The new St. Elizabeth Hospital was opened for patients last month. It has been finished with all modern and up-to-date appliances and will represent an investment of more than $250,000.

Tuberculosis Nurse for King County. The Tuberculosis division of the Seattle Department of Health has provided a nurse, Miss Anne Moore, whose time and services will hereafter be at the disposal of the physicians of King County in the care of tuberculous patients. She can be reached at the City Hospital.

The Seattle Obstetrical and Gynecological Society, at a regular meeting held Dec. 10, adopted by-laws and outlined work for future meetings, which will include reviews of the literature, case reports and discussions of topics of interest along obstetrical and gynecological lines.

Dr. H. A. Smith, recently of Chelan, has located at Waterville, where he has purchased the practice of Dr. Leslie, who was recently killed in an automobile accident.

New County Physician. Dr. Pinckard, of Ellensburg, was last month chosen as county physician by the Board of County Commissioners. He will attend to the poor in the county as well as the patients in the county jail.

Dr. W. M. Beach, of Shelton, has again entered the practice of medicine. He was a pioneer physician of Mason County, but for a number of years has been out of the harness. He has been active in recent sessions of the legislature, where he has done useful work in health and medical legislation.

Dr. T. Rannals has located for practice at Puyallup, having moved to that city from Fairfax.

Dr. J. F. Scott, of North Yakima, was injured last month in attempting to stop a runaway team. He endeavored to catch the horses, but was thrown and kicked in the ribs and back. While painful, his injuries were not serious.

Police Pension Board of Seattle. The pension board of the police department has been reorganized and consists at present of Doctors H. M. Read, J. T. Mason and C. France.

Dr. Walter Johnston, of Seattle, has resumed the practice of medicine after several years of retirement. He has settled in Ballard, where he formerly practised for ten years.

Marriage of Doctors. Dr. Francis O'Neill, of Spokane, was married Dec. 10, to Miss Maud Porter, of that city. Dr. G. G. Agerton, of Anacortes, was married at Tacoma, Nov. 26, to Mrs. Deliah Jones, of Seattle. Dr. S. P. Murphy, of Pasco, was married last month at Sheridan, Wyo., to Miss Harriet Friend.

IDAHO.

Municipal Hospital at Pocatello. It has been decided that the city and county will purchase the general hospital in the city and conduct it for the benefit of both city and county. Hitherto conducted as a private institution, the stockholders have arranged details for changing it thus into a public institution.

Dr. C. W. Lindsay has settled for practice at Wardner, having come to that city from St. Joe, where he had been in charge of the Idaho Hospital.

Dr. J. J. Gable has located for practice in Lewiston, having gone there from Bozeman. He formerly practised in Lewiston.

OBITUARIES.

Dr. F. A. Short, of Portland, Ore., died Dec. 11, of disease of the heart. He had attended the meeting of the County Medical Society the previous evening. He was thirty-nine years of age and a native of Salem, Ontario. He had practised in Portland six years, coming there after practising for four years at Gresham.

Dr. R. R. Ross, of Franklin, Wash., died at Seattle, Dec. 18, at the age of forty-nine years. He was a graduate of Trinity Medical College, Toronto. He came to Seattle from Nebraska in 1900 and practised there for several years before going to Franklin.

Dr. Robert Frink died of carcinoma in Tacoma, Wash., Dec. 14, at the age of seventy-nine years. He was a native of Austria and had lived in Tacoma thirty years, going there from Kansas. He retired from active practice several years ago.

REPORTS OF SOCIETY MEETINGS

OREGON.

PORTLAND CITY AND COUNTY MEDICAL SOCIETY.
Pres., W. T. Williamson, M.D.; Sec., G. S. Whiteside. M.D.

The regular monthly meeting of the Portland City and County Medical Society was held at Portland, Ore., Dec. 3, 1913, with President Williamson in the Chair.

Members present: Drs. Tucker, Tamiesie, O'Day, Pettit, Sears, Johnson, White, Baar, Mackenzie, Hamilton, Tilzer, Wright, Coffin, Manion, Else, Kohler, McClure, Baird, Strohm, Dunlap, Ralph Walker, Julia H. and C. E. B. Flagg, Ricen, Sabin, Rybke, L. Nelson, Pease, Bettman, Chipman, Booth, Myers, Payne, C. C. Moore, Spencer, Slocum, Shea, Sternberg, Selling, Williamson and Whiteside.

Proposed for membership: Drs. Bailey and Myers.

Elected to membership: Dr. J. F. Calbraith.

Papers.

Stereoscopic Radiography. By Dr. Tamiesie. He described the underlying principles and showed many interesting views of bones and organs normal and pathologic.

Dr. R. Walker opened the discussion. Agrees with Dr. Tamiesie as to usefulness of these views of tissues. Dr. Luther Hamilton finds the method especially useful in joints. Dr. Sears speaks on the relative advantages of bismuth given by mouth and by rectum. Dr. Baar speaks of the value of skillful interpretation of x-ray pictures. Dr. Tucker thinks the stereoscopic x-ray very useful in showing location of foreign bodies in soft parts and especially in the skull.

Surgical Treatment of Gallbladder Conditions. By Dr. G. N. Pease. Discussion as to the inadvisability of cholecystectomy. Dr. Pease prefers the latter. Describes cases of each method also another of removal of the gallbladder which was perfectly successful. Cases four and five were of gallbladder drainage.

Dr. Sternberg, in discussion, believes Dr. Pease is wrong in his choice. The statistics show greater mortality after removal than after drainage. Dr. O'Day, Mackenzie, Else, Baird, Pettit, Sears discussed the subject.

WASHINGTON.

KING COUNTY MEDICAL SOCIETY.

Prest., J. C. Moore, M. D.; Secty., H. D. Brown, M. D.

The regular meeting of the King County Medical Society was held in the Chamber of Commerce, Seattle, Wash., Nov. 17, with about 40 members present. Vice-President L. H. Redon presided in absence of the president. Minutes of the previous meeting were read and approved.

Pathologic Specimen.

Fibro-myoma of the Uterus. By N. A. Johanson. Complicated with pregnancy. Usual symptoms for about four months. Then enlargement of abdomen and persistent pain. Within a week abdomen acquired size and shape of woman at term.

A. C. Martin said that pregnancy usually took place above the tumor.

J. H. Davidson wished to know why the case could not have gone on to term.

Dr. Johanson, in closing, said the fetus was dead. With the tumor occupying the whole of the pelvis it was impossible to have the pregnancy continue.

Papers.

Metastatic Gonorrheal Affections of the Eye. By E. B. Burwell. With a report of case. The distinguishing characteristics are a dull injection of the bulbar conjunctiva, slight mucous secretion, no gonnococci present in discharge, usually bilateral. Occurs in patient suffering from articular metastases. Comparatively mild in character, and usually runs a benign course leaving no sequelae. Treatment consists of rest, light diet, atropin, argyrol, hot boric irrigations, 2 per cent. silver nitrate to lids daily. He also recommended antigonococcic serum.

H. V. Wurdemann said attack comes on when the specific urethritis has apparently ceased; spoke of four cases.

A. E. Burns said the trouble must be systemic, as it appeared following the disappearance of the original trouble.

Anatomic Character of Complete Anorectal Fistula. By A. C. Crookall. He gave diagramatic blackboard sketches of all important points in locating the fistulous tract. Method of operation should be formulated beforehand, and the fistula cured with the first operation. The methods used in locating the internal opening are the flexible probe, digital and ocular examination.

H. D Dudley thought the diagnosis sometimes very difficult but always important. Many deep cases are mistreated.

J. H. Snively asked if injected bismuth solution and a picture would help in the diagnosis.

W. T. Miles wanted to be enlightened as to cutting through both sides of the sphincter where a fistula occurred on both sides.

Dr. Crookall said any fistula crossing the median line is a horseshoe fistula. Bismuth paste is of value in aiding diagnosis when the internal opening is above the internal sphincter.

The Insane of Washington Territory. Mr. Thomas W. Prosch read a very interesting paper on this subject and was given a vote of thanks by the society.

PUGET SOUND ACADMEY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

Prest., J. A. M. Hemmeon, M. D.; Secty., W. K. Seelye, M. D.

The regular monthly meeting was held Dec. 16, at the office of the president.

Members present: Drs. Adams, Bentley, Burns, Burwell, Chase, Cooke, Gray, Greenstreet, Hawley, Hemmeon, Hoffman, Klemptner, MacKinnon, Perry, Plummer, Pontius, Seelye, Swift, Stillson, Wanamaker. Visitors: Drs. Charles Ballance, Will Otto Bell, Howe of Bellingham, Walter Gelhorn and A. P. Lensman.

Meeting called to order by the president, Dr. J. A. M. Hemmeon. Minutes of the previous meeting were read and approved.

Dr. Greenstreet presented a report of the library committee, showing the acquisitions to the library of books and journals on the eye and the ear, nose and throat for 1913. Dr. Greenstreet moved that the present arrangements between the academy and the Washington Medical association be continued for the coming year, if agreeable to the Library Association. Seconded by Dr. Stillson. Carried.

Papers.

The Interrelation Between Systemic Diseases and Diseases of the Eye, Ear, Nose and Throat. By Dr. Arthur P. Lensman.

Diseases of the Eye, Nose, Throat and Mouth as Viewed by the Pediatrician. By Walter Gellhorn.

Personal Notes on the Eastern Operators. By Dr. George W. Swift.

Drs. Perry and Pontius spoke on the 1913 Clinical Congress of Surgeons in Chicago, and Dr. Seelye reported briefly on some of the work he saw recently in Baltimore and Philadelphia, including the trephining operations of Colonel Elliott and Dr. Fox, the blood-clot dressing of Friedenwald and Reik in mastoid opertions.

On motion of Dr. Perry it was voted that a formal vote of thanks be given Drs. Lensman and Gellhorn for their very excellent papers.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

A Text-Book of Biology. For Students in Medical, Technical and General Courses. By William M. Smallwood. Ph.D., (Harvard), Professor of Comparative Anatomy in the Liberal Arts College of Syracuse University. Octave, 285 pages. Illustrated with 243 engravings and 13 plates, in colors and monochrome. Cloth, $2.75, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

With the expansion of biological science along so many lines it becomes increasingly difficult to formulate a summary of the more important phases of knowledge within this wide field. The need for such a summary has been felt for some time, especially by general students wishing to be informed concerning the fundamental principles of biology without being forced to make a critical study of the systematic treatises on botany and zoology produced to meet the requirements of those interested in the technical aspects of these sciences. The work of Dr. Smallwood is designed to fill this gap in the literature of biology and will no doubt serve its purpose admirably, since it is broad in scope, scholarly in treatment and based upon the most recent investigations.

The first nine chapters of the book deal with the basic facts relating to the structure and development of vertebrate animals, the frog and related amphibians being used to illustrate the general principles involved. Two chapters are utilized to discuss the protozoa and other simple organisms. This is followed by a summary of the cell theory, and by chapters dealing with bacteria and fungi. The classification of animals and plants is next briefly outlined for the benefit of students who have not had previous training in systematic biology. The last five chapters contain the most vitally important resumes. Under the head of biological adaptations the author deals with such phenomena as parasitism, symbiosis and communal life. Particularly interesting to medical students is the chapter in which is discussed the biological factors in disease. Two chapters are devoted to the broader phases of animal evolution, variation and heredity. The concluding chapter deals with animal behavior and its relation to mind. In earlier works this subject is hardly touched upon, since genetic psychology has but recently attained the dignity of a distinct branch of biological research. The work contains an excellent glossary and should prove a most valuable tevt for students entering upon medicine or other technical pursuits involving a biological basis.

Kincaid.

Anatomy, Descriptive and Applied. By Henry Gray, F. R. S., Fellow of the Royal College of Surgeons; lecturer on Anatomy at St. George's Hospital Medical School, London. New (English) edition, thoroughly revised and reedited, with the Basle Anatomical Nomenclature in English, by Robert Howden, M. A., M. B., C. M., Professor of Anatomy in the University of Durham, England. Imperial octavo, 1407 pages, with 1126 large and elaborate engravings. Cloth, $6.00, net; leather, $7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

From the same press which recently published Spitza's new American edition of Gray comes a new English edition by Professor Howden. The books are so similar that the publisher's note of one has the same wording as that of the other. As in the American edition, we find the chief modification in the use of the Basle nomenclature. A further change in this edition is the grouping of the paragraphs on Surface Anatomy into a special chapter which admits of more easy reference. The section on Histology has been shortened, the notes on Applied Anatomy have been thoroughly revised an about two hundred new engravings have been added. Although much of the text has been rewritten, obscure passages clarified and the latest anatomical knowledge added, Gray has lost none of its character and still remains in this edition, as in all its predecessors, the best text-book on anatomy every written.

Turner.

Treatment of Internal Diseases. By Prof. Norbert Ortner, University of Vienna. Edited, with additions, by Nathaniel Bowditch Potter, M. D., assistant professor clinical medicine Columbia University. Translated by Frederick H. Bartlett, M. D. Second edition in English, from the fifth German edition. Cloth, 643 pages; $5.00. J. B. Lippincott Co., Philadelphia and London.

The second English edition of this work has been completely revised and to a great extent rewritten to conform to Ortner's fifth edition. The scope of the book is indicated by its title. Only as much pathological physiology is discussed as bears on rational treatment. Dietetic, climatic, hydrotherapeutic and other extra-medical methods are emphasized while the advantages and disadvantages of drugs applicable to the different diseases are thoroughly discussed. In addition, the editor has written a chapter upon the treatment of neurasthenia. Upon several subjects English authorities may differ but copious notes in brackets endeavor to illustrate these differences of opinion. The book will take its place as one of the best on the subject. Turner.

A Manual of Otology. By Gorham Bacon, A. M., M. D., Professor of Otology in the College of Physicians and Surgeons, Columbia University, New York. New (6th) edition, thoroughly revised. 12mo, 536 pages, with 164 engravings and 12 plates. Cloth, $2.25, net. Lea & Febiger, Philadelphia and New York, 1913.

With this latest edition of a deservedly well-known textbook, most of the important points of modern otology are quite thoroughly covered in a clear, readable, yet concise way. Very few words are wasted in presenting the ideas and the essentials are kept well before the reader, making it a very compact volume of readily accessible facts. Especially commendable is the emphasis laid upon the close relation between the labyrinth and intracranial disease, and also the prominence given to serum diagnosis and therapy. It is in these fields that otology shows the most marked progress. The type is large enough to be easily read, the illustrations are excellent and well selected, and the work is arranged in a most convenient way. Altogether it admirably fills the place for which it is planned and is worthy not only of the attention of the beginner, but of the advanced student as well. Plummer.

The Treatment of Sexual Impotence. By W. J. Robinson, M. D., Chief of Genito-Urinary and Dermatology Department, Bronx Hospital and Dispensary ,etc., etc. Cloth, 422 pages, $3.00. Critic & Guide Co., 12 Mt. Morris Park, West, New York, 1913.

The first edition of this volume was exhausted two months after publication. The general divisions of the book are masturbation, pollutions, sexual neurasthenia, sterility, priapism and miscellaneous topics. The subject is largely handled clinically, a number of case records being incorporated in the text. Among the items of interest are the wide prevalence of masturbation in early adult life of the male, 90 to 95 per cent., and much less frequent in girls and women. More time might have been devoted to causes and prevention. It is surprising that the author almost omits entirely the greatest prophylaxis of all, early circumcision. He also states that in three of his cases locomotor ataxia was induced by masturbation. The harmfulness of coitus interruptus and coitus condomatus (condoms) is preached. The chapter on treatment of pollutions is good. The causes of impotence are of two classes, pathologic changes and psychic. The author expresses himself and his original ideas in the well-known characteristic freedom which has given his editorials in the Critic and Guide such wide publicity and interest. He does not hesitate to advise a mistress for the young man who has difficulty in keeping his sexual appetites within bounds, especially when there is some doubt as to his potency. He believes it better "to try it on the dog" rather than advise marriage—and there is sense in this course if not morals. The forceful, picturesque style and convictions make the book interesting reading. PEACOCK.

Medical Research and Education. Science and Education. A Series of Volumes for the Promotion of Scientific Research and Educational Progress. Vol II. Edited by J. McKeen Cattell. The Science Press, New York and Garrison, N. Y.

In this book the editor collects a series of lectures by various authorities on medical, educational and research questions, also on the history of our art and science. The historic reviews of the development of branches of medicine are very interesting, as they remind us of the deeds of many great men, whose names are familiar to us but whose works we have probably forgotten. In all the papers we note a desire on the part of the authors to reform medical education according to the German method, making the medical schools parts of the universities, permitting the student to a certain degree to select from a large number of lectures on different or more specialistic subjects, such as appeal to his personal liking and inclinations. Uniformity in the entrance requirements and in the curriculum should be observed in the different schools in order to make it possible for the students to wander from university to university to hear the lectures of the men he considers the best on the different branches. Aside from the curriculum the student should have a chance to hear such lectures of other faculties as are of interest to him. Greater stress is justly laid upon laboratory and ward work as a means of producing thorough diagnosticians and scientific physicians. However, Richard M. Pearce, of Pennsylvania, seems to go too far in demanding observance of the "do-it-yourself" method. We must, to a certain degree, take up the work where our predecessors left off and profit by their experience in order to push this work along a little farther before we ourselves surrender to younger men. LEEDE.

A Manual of Surgical Treatment. By Sir W. Watson Cheyne, Bart, C.B., D.Sc., LL.D., F.R.C.S., F.R.S., Hon. Surgeon in Ordinary to H. M. the King; Senior Surgeon to King's College Hospital, and F. F. Burghard, M.S. (Lond.), F.R.C.S., Surgeon to King's College Hospital, and Senior Surgeon to The Children's Hospital, Paddington Green, London. New (2d) edition. Thoroughly revised and largely rewritten. In five octavo volumes, containing about 3,000 pages, with about 900 engravings Price, cloth, $6.00, net, per volume. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

This fifth volume describes the treatment of surgical affections of the pancreas, liver, spleen, genitourinary organs, larynx, neck, thorax and breast. It completes a system of surgical treatment which will be most welcome as representative of the best British thought in this line. Like the four preceding volumes, which have been reviewed in these columns, it consists almost entirely of a description of methods employed by the authors in their surgical practice. Very little material from the work of foreign surgeons is mentioned or discussed unless it is already a part of their daily routine. The illustrations are a valuable addition to the text. FORBES.

Surgical Experiences in South Africa. By George Henry Makins, C.B., F.R.C.S., Senior Surgeon to St. Thomas Hospital, London; Vice-President to the Royal College of Surgeons of England; Consulting Surgeon to the South African Field Force, etc. Second tdition. Price $3.75. Oxford University Press, American Branch, 35 West 32d St., New York.

The value of this book rests largely in the fact that these are the personal experiences of the author. His attractive literary style makes them very vivid to those interested in the surgical aspect of a great war. The illustrations are numerous and clear, and include many skiagrams of fractures and bullets, and interesting photographs of field hospitals, tents, ambulance wagons and paraphernalia of the medical corps. In the chapter on intestinal injuries it is interesting to note that Mr. Makins confessed no improvement in his diagnostic ability after his extensive experiences. Many of the injuries were immediately fatal and did not call for a diagnosis. Some were cases where preforation was suspected, but the mild symptoms were misleading and a sudden development of septic peritonitis was quickly followed by death. In other cases of suspected intestinal performation a spontaneous recovery ensued and it is believed that no perforation occurred. In every case where the symptoms of performation of the small intestines were sufficiently clear to indicate laporotomy death followed operation. We consider the book a valuable one to those in civil as well as military practice. FORBES.

The Care of Children from Birth to Adolescence. By Bernard Myers, M. D. Paper, 174 pages. Henry Kimpton, 13 Furnival Street Holborn, E. C., London.

Books of this sort have long filled a valuable place in serving to give to each mother an intelligent understanding of those conditions and influences which keep the baby and the child well. Dr. Bernard Myers has filled these pages in a condensed, easily accessible manner with a host of practical considerations. The preface is written by Dr. George F. Still, of London, probably the greatest living clinician in diseases of children of our day. The reviewer has found this book, as did Dr. Still, "full of valuable information on the most practical details of child life and child culture." MANNING.

Headache. Its Varieties, Their Nature, Recognition and Treatment. By Dr. Sigmund Auerbach, Chief of the Polyclinic for Nervous Diseases in Frankfurt. Translated by Ernest Playfiair, M. B., M. R. C. P. Cloth, 208 pages, $1.50. Oxford University Press, 35 West 32nd Street, New York.

This small book is an exceptionally well written treatise on the pathology, diagnosis and treatment of the different forms of headache. Chronic headaches, occurring as fairly independent complaints, are at times very difficult to diagnose, but we have in this work many detailed points which will prove a great help to the physician in such cases. The more primary forms of headache, namely, migraine, neurasthenic and nodular or rheumatic, receive the chief attention, the chapter on nodular headache being of especial interest. Headaches associated with diseases of individual organs, headaches in general diseases, and combinations of different headache are thoroughly discussed. Facts which are given us in this little volume are hardly to be found so clearly set forth or in such detail in any text-book, so this work should prove a most valuable one to the profession. TURNER.

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ORIGINAL CONTRIBUTIONS.

SUCCESS IN THE TREATMENT OF CONGENITAL CLUB-FOOT.*

By Chas. R. McClure, M. D
PORTLAND, ORE.

To achieve success in the treatment of any deformity involves not only a working knowledge of the normal anatomic structures involved, but also a clear conception of the abnormal condition presenting, both in the bony and soft tissues. When dealing with congenital deformities the etiologic factors producing them are of little importance and are practically disregarded in our theories of their treatment. But the period at which they come under our observation does determine, in a large measure, just what procedures are adopted in effecting their cure.

Congenital club-foot, being one of the most frequent of such deformities, is most illustrative of how the age at which treatment is begun influences the ease and success of the various measures used in their correction. The treatment of congenital club-foot has been considered a rather closed chapter in medical writings, as is noted by the paucity of articles on the subject in general medical literature, in contradistinction to those appearing in those journals limited to orthopedic surgery. Seeing a bad case of relapsed club-foot, recently, in a six-year-old boy suggested the appropriateness of a paper on this subject.

In considering the treatment of congenital club-foot we must discuss the proper time to commence treatment, the various methods of overcoming the deformity, the measures used to retain our correction, and what constitutes a cure. While there are several varieties of congenital club-foot I am limiting this discussion to that most common variety, ordinarily meant when speaking of club-foot, known as talipes equinovarus.

We must keep in mind, briefly, just what anatomic conditions are present. The foot is held in equinus, due to the contraction of the tendo Achillis, thus producing the inability to bring the heel to the ground. The foot is in a position of varus, or inversion, the sole looking inward and upward. Besides this the anterior portion of the foot is adducted, so that the tendons and muscles on the inner side of the foot are shortened, while those on the outer side are lengthened. The tarsal bones are misshapen in varying degrees with the extent of the deformity. But one other anatomic feature needs mention in this resume, but it is most necessary that it be appreciated as it has such an important bearing on the success of the measures used, as will be referred to later. I have reference to the poor development, or lack of development, of the posterior tuberosity of the os calcis.

When, then, is the best time to commence treatment of the congenital club-foot? In this connection it is well to recall some axiomatic truths in deformity correction. The earlier treatment is instituted after the inception of any deformity, the easier it is handled and the better the prospects of its ultimate cure, and especially is this true of congenital deformities. Deformity surgery owes much to the work of Julius Wolff for enunciating the accepted law that "every change in the form and position of the bones, or of their function, is followed by certain definite changes in their internal architecture, and equally definite secondary alterations of their external conformation in accordance with mathematical laws." In other words, the shape of the bones is the result of adaptation to function.

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*Read before the Thirty-ninth Annual Meeting of Oregon State Medical Association, Medford, Oregon, Sept. 18-19, 1913.

Thus it is that the longer the club-foot goes without correction, and especially after the added influence of weight-bearing in the abnormal position, the greater will be the change in the shape of the tarsal bones. Strange, then, that there should be any difference of opinion as to the proper time of commencing treatment, but nevertheless it is a fact that it is quite wide-spread among the profession that treatment should be deferred until the end of the first year. Nothing could be more erroneous, and yet some men of unquestioned ability have given support to this view. Nor should any delay in treatment be sanctioned in the hope of spontaneous cure, as untreated club-foot only tends in the direction of obstinate malformation. Under modern methods of treatment a cure may be promised in children and a great improvement in adults.

Mr. Robert Jones, of Liverpool, in presenting this subject to the British Medical Association, in 1909, said, "treatment should be begun at once, for there is no class of cases which more bitterly resents procrastination or insufficient handling. I emphasize this the more as, even yet, we have authors who mischievously write of six weeks and ten months as a suitable age to commence treatment." Let me repeat, then, for the sake of emphasis that the time to commence treatment is immediately after birth or as soon as the case comes under observation.

The methods used in overcoming the deformity vary according to the age at which treatment is commenced. In treating club-foot, as in any other deformity, the aim must be at overcorrection, as therein lies the secret of success. Until that principle is thoroughly appreciated and put into action we will continue to have failures in the way of half-cures and relapses. While there should be no difference of opinion as to the necessity of commencing treatment early, there is well merited argument in the position taken as to the kind of treatment instituted. While such an authority as Silver states, "the fact that the little patient cannot walk has a distinct advantage in that it permits of the maintenance of a degree of overcorrection which would not be possible for the walking child," in support of his contention that walking is not necessary to a cure, my study and experience has taught me otherwise, and for the most part personal views will predominate in the methods advocated in this paper.

Remembering that the deformed position of the foot is due mostly to the contracted soft structures, all treatment during the first six months of life should be non-operative. Manipulation, massage and some retentive dressing to hold our correction should constitute the measures used during this period. Manipulation with the hand to overcome the contractions in the soft tissues, massage to stimulate the over-extended ligaments and muscles on the outer side of the foot and leg, together with a simple retentive dressing will suffice to effect a cure in cases of moderate severity; will cure the varus but not the equinus in others, and in all, even with the most severe, render simpler the surgical measures necessary to complete a cure when the time for it has arrived. It must be remembered that the foot grows rapidly during the first months of life and, if the growth can be directed in a normal direction during this period, much can be accomplished in the way of correction.

As to the details of carrying out these measures, the judgment of the surgeon must determine. Where convenient the manipulations should be made, in many cases, by the surgeon himself, at intervals of one to two weeks, all manipulations being made, of course, in the direction of overcoming the deformity by stretching the contracted soft parts. During this period the equinus element of our deformity may be ignored, centering all our energies to the correction of the varus and adduction of the forefoot. After each manipulation a light plaster-of-Paris dressing is applied to hold the correction gained. In other cases the treatment may be carried out by an intelligent nurse or mother, under the direction of the surgeon. She should be taught to manipulate the foot several times a day, gently unrolling the deformed foot and holding it so for several minutes, at the same time massaging the weak and over-stretched muscles. A little later she should be taught how to apply a simple retentive dressing to hold the foot in its corrected position. For this purpose I prefer a splint made out of sheet zinc, cut long enough to reach from just below the knee to just beneath the big toe. The splint should be made slightly concave so as to fit the leg, and then lined with thick felt so as to avoid pressure sores. It is then applied to the inner side of the leg and foot and firmly held by a bandage. To obtain the best results it must be kept on continuously, being removed night and morning for the purpose of bathing and manipulations. This method, devised by Dr. Freiberg, of Cincinnati, has given most satisfactory results, the adduction being overcome and the foot becoming more flexible. Except in the mildest cases this serves only until the proper time has arrived to complete the correction under anesthesia.

It may be well, before considering the care of cases over six months of age in which there is not much disagreement as to methods, to state my objections to the use of plaster-of-Paris and forcible correction under anesthesia during the first six months of life. I will grant that some cases of club-foot, so treated, are cured, as I have myself seen and which are so reported by competent observers. My contention has been, and is, that in most cases walking or the effect of weight-bearing is necessary to a cure. Silver, who does not so believe, does make this statement though: "While no case of club-foot should be pronounced cured until the use of the foot in walking has demonstrated its normal function and, further, while walking with the foot maintained in a corrected position is a most valuable aid in treatment," etc. When such competent observers, who are radical in their treatment of early cases, make such admissions, we are all the more confirmed in our belief as to the wisdom of delay in instituting such active treatment.

We admit that the shortened and contracted tissues holding the deformed bones in their exaggerated, deformed position may be overcome and the deformed bones placed in a normal position by early measures, but we do contend that simply holding them so does not cause the tarsal bones to change their shape sufficiently, in many cases, to prevent a tendency to a return of the deformed position. It is only when the effect of weight-bearing and walking, with the foot held in the corrected position, is added, that the tarsal bones are moulded and shaped into the normal, which when obtained never reverts to the abnormal. It is impossible to say what few cases might be absolutely cured before the walking period. Few children walk before the tenth month, and some not till later. When the deformity has been corrected or overcorrected, plaster-of-Paris dressings hold the foot better than any shoe, brace or adhesive plaster, and so held it should be worn for at least four months after walking to be sure that the reshaping and remoulding of our bones is permanent.

Since plaster-of-Paris is the universal dressing, cases treated by means of it from the start, with or without forcible correction, must be condemned to reapplications of it for twelve to eighteen months, tedious both to the mother and surgeon. During all this time the little patient is deprived of the pleasure of having his leg and foot bathed and rubbed. During the early months of life, especially in babies with short and fat feet and where the posterior tuberosity of the os calcis is poorly developed, it is hard to apply a plaster-of-Paris dressing that will hold effectively. We therefore favor, in most cases, delaying the use of plaster-of-Paris and forcible correction under anesthesia until shortly before the child is expected to begin walking, the preoperative care, by means described above, rendering very easy the operative procedures, as well as reducing the time necessary to wear retentive casts to insure a cure.

We are now ready to consider the operative care of these cases. Many of our infantile cases, having been treated consistently as described above, will have been so nearly corrected that a simple tenotomy of the tendo Achillis will place the foot in its proper position. But in considering the operative treatment we must include all infantile cases treated by manipulation and massage, in which some deformity is still present, untreated cases coming under observation during the few months previous to walking and those cases in which walking has already been instituted. Naturaly the older the child and the longer the deformed foot has been walked upon, the more difficult will the correction be.

The operative period having been reached, the child having been prepared for operation is placed under full anesthesia. Forcible manipulations with the hands now attempt to overcome the varus and adduction, the equinus being neglected for the time being. It is a mistake to overcome the equinus by tenotomy of the tendo Achillis before attempting correction of the varus, because the pull of the tendo Achillis on the os calcis constitutes a counter pull which is of the greatest advantage in making the overcorrection of the varus deformity. The equinus is, in every case, the least important part of the deformity and also the most easily overcome, so that in any plan of treatment we should delay to the last its correction, thereby taking advantage of its pull on the os calcis to stimulate growth of the posterior tuberosity in the early cases, as well as to secure its aid in overcoming the varus under forcible straightening. When unable to overcome all the varus or adduction by use of the hands alone, there is no better way than to place it on a well padded, wedge-shaped block, when any amount of force may be brought to bear in overcoming the deformity. Wrenches of various kinds have been devised for grasping the foot and overcoming the deformity, but there are few cases where they can be used to any advantage over the hands and wedge-block. But however accomplished the manipulations must be kept up until the foot is held in overcorrection with ease. The tendo Achillis being now divided subcutaneously, the final correction is made and the plaster-of-Paris dressing applied.

We must not be satisfied with half measures or half-way results. To achieve success the deformity must be overcome and nothing must stand in the way of accomplishing it. Should all our manipulations fail in securing a satisfactory overcorrection, we have recourse to several operative procedures of more or less merit. (a) Tenotomy of the tendo Achillis will be necessary in practically every case and as a rule will be the only cutting operation necessary. It is usually made subcutaneously. (b) In some cases the plantar fascia will be so tense and resistant to stretching that the foot can only be straightened after its division and this is also done subcutaneously. (c) In a few cases the division of the plantar fascia alone fails to effect an overcorrection and here we must make use of Phelp's operation, which consists of a complete open section of the contracted tissues on the concave side of the foot, dividing skin, fascia, tendons, muscles, ligaments and all resisting structures. Correction now being made we will have a large gaping wound present which should be packed with sterile gauze and included in the plaster dressing. (d) Occasionally the tendons of the tibialis anticus and posticus will need division. The tibialis anticus may be tenotomized subcutaneously safely, but the posticus should only be divided in an open operation. (e) In severe relapsed cases in the young and in bad cases of more advanced years correction will be obtained only by removing a wedge of bone from the outside of the tarsal bones, a so-called cuneiform osteotomy.

The overcorrected position having been obtained, its retention is secured by a plaster-of-Paris dressing, which must be applied so as to hold the foot in its overcorrected position without causing any pressure sores. Such a dressing must extend from the toes to above the partially flexed knee and its skillful application is the test of one's plaster technic. These plaster dressings should be renewed as often as necessary to insure the retention of the corrected position, as well as to seek further overcorrection. Within a few weeks the patient should be encouraged to begin walking upon the foot held in its overcorrected position and this must be continued until the bones have responded by a change of their structure. This will consume a period of not less than four months, and walking in the plaster shoes until the bones and soft tissues have been demonstrated to have attained a permanent change in their internal and external structures, as evidenced by the appearance of the uncontrolled foot in both an active and passive position. When this point has been apparently reached we discard the plaster shoes, apply an adhesive plaster dressing to exercise a little further control and place the patient in good strong shoes. The plaster-of-Paris shoes having been discarded, massage and active and passive exercises of the weakened musculature will aid strongly in making the apparent cure.

The wearing of any brace will be unnecessary if the above treatment be carried out efficiently. Braces should never be used in the infantile cases, but may have a field of usefulness in the after-treatment of severe untreated adult cases. I do not believe that a case of club-feet was ever cured by the wearing of braces alone, although they undoubtedly do cause some correction.

Cases of club-feet require most careful after-observation for a year or two. Should the least tendency be shown to the return of any of the deformity it should receive immediate attention, for in the case of no affection is eternal vigilance more necessary to achieving success.

What should determine as to what constitutes a cure in cases of club-feet? Dr. E. H. Bradford, a prominent orthopedic surgeon, writing on the treatment of club-foot, remarks: "The literature of the treatment of club-foot is as a rule that of unvarying success. It is often brilliant; and yet in practice there is no lack of half-cured or relapsed cases, sufficient evidence that the methods of cure are not universally understood. In club-foot half-cures are practically no cures at all. The great test of the cure of club-foot is the position of the foot in walking. There should not be the slightest attempt to return to deformity at any period." Imperfect results give rise to many cases of so-called relapsed club-foot. To speak of a cured club-foot reverting into a relapsed club-foot is really a contradiction of terms. A cured club-foot will no more relapse than will a normal foot. Relapse means that the cure had only been apparent, the bones not yet having been transformed by function in a normal position. The criterion of cure, then, is the steady maintenance of the foot to the front in all positions, whether standing, sitting, lying or walking.

Bleeding in Typhoid Fever. It is difficult to explain how the good effects that may follow a hemorrhage come about. There is no doubt, however, but that it produces a profound effect upon the whole bodily economy.—R. D. Rudolph, M. D. Am. Jour. Med. Sciences, Jan., 1914.

CARDINAL PRINCIPLES IN THE MANAGEMENT OF BONE TUBERCULOSIS.*

By Fred J. Fassett, M. D.

SEATTLE, WASH.

"I dressed the wound, God healed it," was the dictum of Ambroise Pare. There is no place in the field of medicine where this needs more to be remembered than in the care of bone tuberculosis. This is a self-limited disease and patients recover therefrom, doctor or no doctor, but the recovery is more prompt and the restoration of function more perfect if the patient has, during the struggle, the management and guidance of a physician. We are here to consider seven cardinal duties that rest upon the medical man who accepts this responsible position.

EARLY AND ACCURATE DIAGNOSIS.

If the doctor fail in this duty, the result is so sure to be imperfect that the performance of the other duties seems hardly worth while. It reflects no credit on the doctor to be able to say "Potts' disease," when he sees a hunchback, or "hip disease," when there is pain and shortening. By that time the hope of a perfect cure has forever passed. At least a provisional diagnosis may be made before the advent of deformity and often before the advent of pain.

Of all the diagnostic signs of bone tuberculosis, there is one which is first to appear and ought to be given serious consideration even in the absence of all the rest. This is *involuntary muscle spasm which limits the motion of a joint.* This sign may be present from other causes than tuberculosis but, in the absence of some other adequate cause, a joint which the muscles involuntarily protect had better be further protected on the suspicion of tuberculosis.

Frequent stories of this sort seem to justify this emphasis: A child is taken to the family doctor because he is "run down and acts stiff or limps." "Does he have any pain?" "No, doctor, he says he never has any pain, but he doesn't like to play and some days he acts real lame." Such a child is frequently sent away with a tonic or a diagnosis of "rheumatism" or even with a lecture to the anxious mother, which makes her think twice before returning to the doctor, at least, to that same doctor. Such incidents are so common as almost to be called a part of the clinical picture of bone tuberculosis. And in regard to that diagnosis of "rheumatism," suppose we resolve, for say, three months, never to use that word "rheumatism." It would make us dig to find substitutes but in that digging we would unearth some very useful knowledge as to the differential diagnosis of bone and joint disease.

The classical symptoms such as pain, tenderness, muscle atrophy, abscess and the like, need only to be mentioned. In regard to the temperature, a word of caution may be appropriate. Some charts will be shown giving the temperature curves of tuberculous and non-tuberculous children. Bone tuberculosis, unmixed with other infection, may give a temperature hardly higher than the normal temperature of childhood.

The radiograph rarely shows any bone destruction at this early stage. What is shown, if anything, is some change in the rate of development compared with the normal child. For instance, in the knee joint there is a "square" look to the epiphysis, due to the more rapid growth, due in turn to the hyperemia of the disease.

The tuberculin test shows whether or not the child has tuberculosis somewhere on board. A negative reaction is of considerable value but ought not, it seems to me, to outweigh other positive findings.

What other conditions are mistaken for tuberculosis? *Osteomyelitis* for one, and it is a sad mistake. In tuberculosis there is no great hurry. Three months after the onset it may be an early diagnosis. But in osteomyelitis, three days after the onset may be too late to avert the long and disastrous course of the disease.

Chronic infectious arthritis. In childhood, there is a strong presumption that a chronic arthritis is tuberculous. There are, however, exceptions, and time is sometimes wasted in treatment with casts or braces which might be more profitably spent in the search for the infected organ from which toxins are being given off to irritate the joints. We say "joints," for, with more than one or two joints involved, we have a very atypical tuberculosis.

Arthritis deformans. It is not uncommon to see hips, stiff with the bony over-growths of the hypertrophic type of this disease being treated with apparatus and even with tuberculin on a diagnosis of tuberculosis. The radiograph should promptly settle the diagnosis.

Developmental abnormalities. I have seen three cases of so-called tuberculous knees where the radiograph showed a purely mechanical separation of the tibial tubercle. The location of the tenderness and a carefully taken radiograph also settle this diagnosis. I have seen three cases where Potts' disease was seriously considered, where the radiograph showed transverse processes of the sacral type on one of the lumbar vertebrae.

On the other hand, I have been called upon to perform bloodless reduction of a hip dislocation where the dislocation turned out to be due to the erosion of the head by tuberculosis. The effect of the Lorenz procedure on a tuberculous hip can be imagined. Fortunately, a complete history and a better radiograph set us right. Errors of diagnosis are the less excusable because there is usually time for such deliberate study.

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*Read before Spokane County Medical Society, Spokane, Wash., Feb. 27, 1913.

When once the diagnosis is made, the physician must constantly and simultaneously provide for six things: Rest, the prevention of deformity, fresh air, good food, the prevention of mixed infection, and operation when necessary.

REST AND THE PREVENTION OF DEFORMITY.

These two duties can hardly be discussed separately for that which produces the one produces the other. The prescription for rest must always be written "q. s.," for no one knows in advance what will suffice. It is sometimes possible to permit the greatest bodily activity so long as the affected joint is kept from motion, but experience has shown me that many boys use up in useless play a great deal of energy which might be directed toward the control of the disease. Therefore, I keep the average child in bed more months in the year or more hours in the day than was formerly my custom.

Whether general rest be needed or not, the affected joint must be kept still. Tuberculosis heals by scar formation and we must see to it that the scars which are formed today are not broken down tomorrow. Does not this fixation of the joint tend to ankylosis? Quite the contrary. If the disease be not far advanced, the synovial membrane may be almost intact and the fixation may be the only means of preserving its integrity. If the membranes be involved so that there is danger of ankylosis, the more reason for keeping the extremity in the most desirable position.

We have seen that an early sign of tuberculosis is muscle spasm. This is nature's effort at fixation and represents both a symptom of the disease and an effort at spontaneous cure. But this fixation of muscles is only moderately efficient and is accomplished at the cost of tremendous nervous wear and tear upon the child. During the waking hours this unconscious guarding of the joint may forestall all pain, but at night the muscles attempt to take their accustomed rest and the "night cries" are the signal by which they are called back on duty. It is for the purpose of relieving the nervous system and the muscles of this tireless watch that we apply casts or braces, or advise traction or recumbency in bed. It is only with this function of the apparatus in mind that we can understand how the child comes to regard his splint or jacket as his most reliable friend. I believe that no small part of the gain in weight and general condition seen in tuberculous children where apparatus is applied, is due to the escape from a sort of nervous prostration due to the subconscious fear of pain.

This is not the only beneficent function of rest. While bone tuberculosis is a local disease, its circulating toxins cause constitutional symptoms. Rest reduces to a minimum the introduction of these toxins into the general circulation. Until we know more of the dosage required to induce immunity, we may well act on the principle of the less toxemia the better.

The deformity induced by tuberculosis comes about through two causes, the force of gravity and the spasm of muscles. Rest and fixation antagonize these two deforming forces. Gravity does its work in the spine and lower extremities by the actual crushing of the honeycombed bone. Muscle spasm shows its action most in the hip and knee. The hip that recovers without treatment, as many hips have done, is fixed in a position of right-angled flexion and adduction across the middle line. If a limb shows atrophy or shortening at the end of a year, it may be due to a virulence of the disease beyond human control but, if it be fixed in a position of deformity, it is somebody's fault. The prevention of deformity is always within our reach.

FRESH AIR.

Most children under active treatment are now receiving a fairly generous supply of this important medication. It has been placed very highly in the list of important measures, but it probably cannot be placed too high. At one time it was felt that fresh air and rest in bed were two mutually contradictory methods but they are found to go beautifully hand in hand. If a child can lie in bed, he can have the benefit of the air without the exhaustion of walking or play. If he can have the fresh air, he can lie in bed as long as any symptom demands without fear of constitutional deterioration.

Most tuberculous hips require traction at some stage of their course. When traction in bed meant confinement in a hot bed room, it was purchased at too great a price and ambulatory traction appliances were the fashion of the day. At present we can well keep up the traction in bed as long as it is needed, and then let the child up with a very simple apparatus. I may add that this only represents my present personal opinion. There was never a time when the question of the necessity of traction throughout the treatment was so much under discussion as the present year.

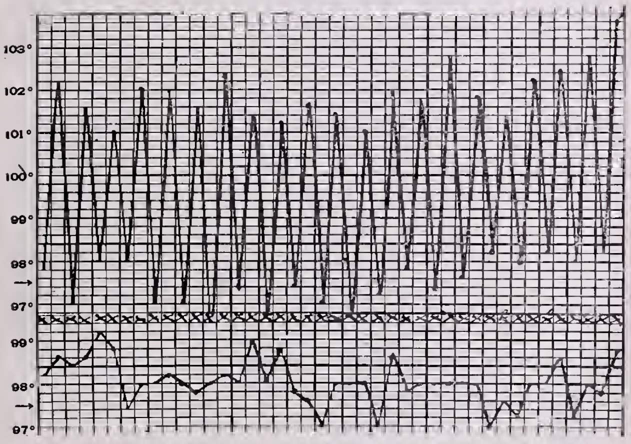
Have you noticed how poorly children with bone tuberculosis stand the life of the public school? What a commentary on our finest systems of ventilation! Actual outdoor schools may be forever impracticable on any large scale, but we may well work toward a ventilation that approximates outdoor conditions. At present there are a few outdoor rooms in the Seattle public schools and there is a very wholesome interest in their extension.

GOOD FOOD.

The pendulum has swung to wide extremes in the feeding of sick people. We are just now in a fairly sane phase, I believe, between the starvation of the past generation and the stuffing of the past decade. Napoleon said, "An army travels on its stomach." No less does the pilgrim from disease to health. Every day when the stomach is out of order and every meal when the digestive juices fail to form for lack of pleasure in the food, counts so much time lost. Children at rest in the fresh air will eat readily almost as much as the same children would when at active play, and should be encouraged to do so. A poor appetite should mean a search for the cause rather than a resort to rules or to dainties. In general, the fat of meats and cream is as efficient as that of the oils or emulsions and is lots more fun.

THE PREVENTION OF MIXED INFECTION.

Bone tuberculosis is a relatively harmless process. Compared with the havoc wrought by mixed infection, it is positively benign. We will show two temperature charts, one of pure tuberculosis, and the other with mixed infection. The difference in the constitutional symptoms of the two patients is exactly what would be suspected from these temperatures. At the beginning, the ordinary case is free from contamination and the characteristic changes of tubercle formation go on unaccompanied by suppuration. The fluid of a true tuberculous abscess is not pus in the sense of being a product of the pyogenic bacteria. It contains no organisms except the tubercle bacilli, and these have often been reported absent.



Upper chart—Tuberculosis plus mixed infection.
Lower chart—Unmixed tuberculosis.

How then does the admixture with pus germs take place? The secondary infection may take place through the blood, but this is not the usual way. A cold abscess usually remains such until it reaches the skin and by its pressure or by incision reaches the outer world. Up till this time the abscess has done no harm except by its actual bulk. Such an abscess may be left undisturbed for weeks and months without apparent detriment to the patient. The surgical maxim still is true, "Wherever there is pus, evacuate it," for this is not pus. When the half-empty cavity remains in communication with the surface, it requires only a few days to set up a mixed infection with a great change for the worse in the condition of the patient.

Most abscesses will sooner or later come to the surface. The problem, then, is to let the fluid out without letting the germs in. One way of doing this is simple puncture with a trocar after complete aseptic preparation. The trocar wound will heal by first intention and the process can be repeated again and again. A man who for the past four years has been very active in the insurance affairs of the Northwest had a lumbar abscess tapped every six weeks for a year, some five years ago. There was never a mixed infection.

OPERATION WHEN NECESSARY.

The evils which attend a mixed infection have had a marked influence in promoting the conservative as distinguished from the operative treatment of tuberculous joints. The surgeon must have very positive indications to justify him in breaking the protective skin over a tuberculous lesion. And this brings us to the last of the duties of our list, the surgeon must operate when necessary.

Whenever one tries to lay down the rule as to when to operate on a tuberculous bone, exceptions to this rule at once arise to confound him. In general, it may be said that a single diseased bone in the foot must be promptly removed to prevent the spread of the disease throughout the member, but we have seen cases where better results were obtained by fixation and hygienic treatment. In general, where the labyrinth of tarsal joints is once invaded, amputation must come sooner or later, but I recall a foot which gave excellent function after simply the removal of the diseased portion of the os calcis. As a rule, a well marked tuberculous knee in an adult will come to excision, and to this rule I recall very few exceptions.

The operations of Lange, Albee and Hibbs for hastening the ankylosis of the spine are winning general approval. We have done the Albee operation twice and the Hibbs operation once. Neither appears to present great difficulty. Not enough time has passed to tell anything of the final results.

The operation most used for the correction of deformity is the subtrochanteric osteotomy of the femur. This is an excellent procedure when truly needed, but many a hip has been said to be ankylosed in deformity when the stiffness was due to the muscle-spasm of a still active disease. Such deformity will yield to traction, manipulation under ether or successive plasters.

That purposeless performance popularly called "scraping the bone" has no place in the treatment of tuberculosis. If one must operate, he must know very accurately the limits of the disease and plan an operation that will remove it with as little exploration and trauma as possible.

Nothing has been said about tuberculin, for it seems hardly demonstrated as yet that this agent deserves to be mentioned in a statement of the definitely established essentials. The men most enthusiastic about tuberculin in bone tuberculosis are those who are least aware of the relatively favorable prognosis of this disease before tuberculin entered the field. After a considerable trial of the various tuberculins and of vaccines made from the contaminating organisms, we have discontinued their use, awaiting further information.

Four things we know do good in all tuberculosis: Early diagnosis, rest, fresh air and good food, and in bone tuberculosis we need to add three more, the prevention of deformity, the prevention of mixed infection and operation when necessary.

SCOLIOSIS.*

By S. C. Baldwin, M. D.,

SALT LAKE CITY, UTAH.

Scoliosis was the name applied by Hippocrates to the deformity which we shall have under consideration. This name has been variously defined by different authors since that time and a number of synonyms have been used, some of which convey a very clear idea of the condition found and others a very vague idea.

Tubby gives as a synonym, rotary, lateral curvature, but then says scoliosis is a rotation of the vertebrae around a vertical axis, frequently but not necessarily combined with lateral deviation or bending of the spine to either side. It must be clearly borne in mind, however, that under the term lateral curvature two different conditions are frequently included, viz., lateral deviation and rotation. Briefly, deviation alone exists in some cases, while in others deviation beyond a certain degree is always associated with rotation, though the deviation of the spine is often no measure of the amount of internal curvature.

Whitman says, "Lateral curvature of the spine is an habitual or fixed deformity, in which the spine is deviated in whole or part to one or the other side of the median line," and adds, "lateral distortion is always accompanied by a certain degree of twisting or rotation of the vertebral bodies."

Bradford and Lovett say, "By this term is understood a constant deviation of the spinal column or a portion of it to either side of the median line of the body, with a resulting distortion of the trunk."

Young says, "Lateral curvature of the spine is a lateral deviation of the spinal column or a part of it from the natural physiologic direction to either side of the median line, associated with distortion of the trunk. This deviation is usually accompanied by rotation of the bodies of the vertebrae on their vertical axes, but. as this is not essential, it need not necessarily form a part of the definition of the deformity."

Further definitions need not be quoted except to state that Lovett, whom I believe to be the highest living authority on the subject, says, in his work on lateral curvature, that the deviation of lateral curvature is always accompanied by an element of twisting, and in a wider sense scoliosis is to be regarded as a deformity of the whole body, especially manifest in the spine. This latter part of the definition I think only applies to a certain proportion of the cases of scoliosis, as at least in one case which I shall show you. The radiograph shows no sign of deformity in any other portion of the spine, but I must also say that this is an exceedingly rare case. We shall, therefore, treat scoliosis as a rotary, lateral curvature of the spine, which term describes both phases of the condition found.

Scoliosis may be found at any age. Some years ago I reported a case of congenital scoliosis of the cervical region, and at that time I was only able to find four or five cases of congenital scoliosis on record. Now it is thought to be much more common than was formerly supposed. However, cervical scoliosis is yet very rare. At almost any age after birth it may begin, but is most apt to begin about the age of adolescence.

The etiology of scoliosis is very varied. It has been thought by some that an insufficient amount of amniotic fluid is sometimes the cause of congenital scoliosis. The case which I have already mentioned, and which is the only congenital one I remember having seen, seems to be accounted for in this way. The deviation was noticed by the father a few days after the child was born, but was diagnosed as a fatty tumor and one or two other things equally foreign to the true condition. Inquiring into the case, although I did not see the child for a number of months after birth, I found the mother remembered that at the time of birth there was very little water and that previous to this she had felt very little movement for some time.

It seems rational, then, to believe that this may account for some of the congenital cases, while others may be due to imperfect development of some portion of the body.

After birth numerous causes may tend to produce scoliosis. Partial recovery after an attack of infantile paralysis may account for a good many cases. Often one leg will be the only part of the body that does not recover and this may improve so much that the child may have fair use of the limb but it does not develop as the good side does.

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*Read before the Nineteenth Annual Meeting of Utah State Medical Association, Salt Lake City, Utah, Sept. 23-24, 1913.

I used to think that, no matter how poor the recovery of the limb was, as to function, etc., it always grew in length as fast as the opposite member, but in the last few years I have seen quite a number of partially recovered cases of anterior poliomyelitis and have measured a number of them and find it often happens that the affected limb does not grow in length as fast as the one on the good side. This, combined with the weakened and relaxed ligaments and muscles, causes a greater or less limp and the child, constantly bending to that side, is likely to develop a lateral curvature which, if left untreated, produces a permanent deformity.

Scar tissues from burns, pleuritic adhesions and particularly resection of ribs following empyema may all cause lateral curvature. In young children the habit of some mothers and more nurses of carrying the child hung over the arm, and in older persons the carrying of heavy loads constantly on one shoulder, tends to produce scoliosis. Numerous other causes may produce it, but these are the most common and will suffice for this paper except that I wish to call attention to the fact that Schulthess claims that from 5 to 15 per cent. of the cases are hereditary.

I desire to call attention especially to the fact that scoliosis is not a tuberculous condition and is not caused by disease per se. It cannot be denied that in some cases of Pott's disease with a large kyphosis there may be a slight lateral curvature but even then there may be no scoliosis. This, in my opinion, is the one exception to the general rule that all lateral curvatures produce scoliosis, but even a slight, lateral curve in Pott's disease is so rare that I have seldom seen it.

The point I wish to impress is that none of the severe cases of scoliosis you see are due to Pott's and that scoliosis is not due to disease but position. This brings me to mention probably the most prolific cause of scoliosis, faulty position in sitting and also sometimes in standing, called habit or occupation scoliosis.

I shall only mention in a general way what pathologic changes take place which permit scoliosis to occur. In the first place, the spinal column is a long letter S, anterioposteriorly, composed of twenty-four separate parts, having a layer of fibrocartilage between at least the dorsal and lumbar parts, called the intervertebral discs. These separate parts are bound together by a series of ligaments which normally permit of only a certain amount of motion. These ligaments are tough, fibrous bands which your anatomy will tell you are inelastic.

To this spinal column are also attached ribs and muscles which largely form the trunk and which are the parts first involved and most seriously affected when we have even a moderately severe scoliosis.

Now what happens? At first the tissues on the convex side are simply made taut and those on the concave side are relaxed. But, as this position is maintained, the muscles on the convex side stretch and the ligaments, whether it be by stretching or over growth from constant tension, become elongated. First, the intervetebral discs and then the bones become flattened on the concave side and may possibly thicken on the convex side, as tissues grow in the direction of least resistance. Then the lateral processes change their angles, the ribs become distorted and later the thoracic and abdominal contents are disturbed, sometimes their functions being seriously interfered with.

The shoulder on the convex side is raised and the shoulder blade becomes so prominent that it sometimes looks like a wing stuck on the back. The pelvis may be tilted or its shape distorted. These conditions continue until the vertebrae at the point of greatest angle may be a perfect wedge, as is shown in this most interesting radiograph, which shows the most unusual curve I have seen. Even the bodies at times have their shape changed by torsion and are not only flattened but sometimes are twisted.

Woolf's law is most concisely quoted by Lovett, as follows: "Every change in the formation and function of the bones or of their function alone is followed by certain definite changes in their internal architecture, and equally definite secondary alterations of their external conformation in accordance with mathematical laws."

I may elaborate this definition by saying that bone, which is the densest structure in the body and therefore the most unyielding, is constructed according to the function it has to perform. The bodies of the vertebrae are so sized and shaped that their articulating surfaces, coming together normally, will support the body-weight without producing distortion but, should this body-weight be permanently transferred to a small portion of this articulating surface and removed from the other portions, then internal and later external changes begin to take place. The weight-bearing portion begins to atrophy, while that portion which has been relieved of weight becomes hypertrophied. At the same time the hypertrophied portion gradually loses its density, while the atrophied portion increases in density. In brief, the tissues adapt themselves to the function which they have to perform.

We have often noticed in x-ray work that bones which are kept at rest and unused, although not diseased but kept at rest because of trouble in other parts, lose their density and a series of pictures taken as the period of rest extends will show lessened density and increased porosity. While these changes have been taking place and this curve has been increasing, the body has been gradually getting out of plumb and to preserve the equilibrium a compensatory curve begins to form, and then the antero-posterior S is converted into a lateral S.

The diagnosis of these cases is not difficult but the condition must not be confounded with Pott's disease, for it must be remembered that this deformity is not of itself a disease but is the product of faulty position, sometimes as the result of disease, but most often due to preventable conditions. A careful examination of the case should be made and it should be determined whether it be a fixed or pliable curve, the length of time it has existed, but above all its etiology, for all these things have a bearing on the treatment. One case I have gives a history of having turned the churn with the right hand for long periods, when but six years of age, and when the effort required was more than the physical strength was equal to.

It may be well to lay more stress on the most prolific cause of scoliosis which is, on the one hand, faulty position habitually assumed either through carelessness or laziness and, on the other, the cramped or strained position, necessarily assumed and maintained by some whose occupations require long continued effort with the body in a position which, under certain conditions, might be normal, but which, when too long continued, become abnormal. Patients and particularly the parents of young patients must be taught that these positions must be overcome and the normal attitude regained.

If this can be accomplished before changes have taken place in the bony forms, the scoliosis may be corrected without much effort, but the trouble is that very few people notice these curves when they are slight or, if noticed, they are considered of little consequence and no effort is made to correct them until the curve has become fixed. Then the patient comes to the doctor and is usually very much surprised to find that the condition is serious. Then many things must be taken into consideration and the question as to whether or not they can be improved by treatment comes up, and if so, what line of treatment promises most.

A vast amount of work and study has been done in the hope that a treatment would be found that would cure at least the postural cases. In the first place, most of the patients with scoliosis, at least during their progressive stage, are physically below par. Therefore, the first thing to be done is to put them on good tonic treatment, and as rapidly as possible bring them up to a normal state of health with all the organs acting as near right as possible.

Many plans of treatment have been suggested and possibly all have accomplished more or less in the way of improvement. Gymnastic exercises of many kinds, the use of swinging rings, parallel bars, one being six or eight inches above the other, bending over blocks or rolls, creeping exercises, exercises in the prone position, both on the face and back, bending exercises with the hips, legs, arms or shoulders fixed, have all been used and probably all with more or less benefit.

Braces of all imaginable patterns have been made and many kinds of jackets have been used. Many different kinds of frames have been made for forcibly correcting the curves. That of Prof. Wullstein, and a similar one used by Prof. Hoffa, of Berlin, and a very elaborate one, capable of many and minute adjustments, were constructed and used by the late lamented Weigel, but in all of these the patients were put up in plaster in the erect position and while in extension.

An apparatus was devised by Lovett and Adams, of Boston, in which the patient was put in the frame in the prone position with the face downward, the corrective pressure being applied while in this position and the plaster applied. Plaster of Paris has probably been more extensively used than almost any other material for the correction of these curves, for it must be remembered that, no matter how much correction can be obtained, it is practically useless unless this correction be permanently maintained, and there is no material which so effectually accomplishes this as plaster of Paris.

After all of these methods had been worked out and as near perfected as it seemed possible, in at least a large proportion of the cases it was impossible to effect a cure and very often no improvement could be recognized. Some of the best men in the country felt that all they could hope to accomplish was the checking of the progress of the deformity and in some favorable cases a slight improvement.

Occasionally in very mild cases which came early a cure might be hoped for, but these were so rare that they only proved the exception to the rule which was the occasional bright spot in the thickening clouds of failure. Within the last two years, however, the clouds are thinning and the bright spots are becoming more numerous, and even the doubting Thomases are beginning to accept the prospect of better things to come.

Something like a year and a half to two years ago, Abbott begun to report the work which he was doing along this line. His reports were so good and his description of the work so convincing that the orthopedic profession became so interested that one after another they visited him to see and judge for themselves his method and examine his cases. So far as I know all who visited him came away impressed with the value of his plan of treatment.

Owing to circumstances which I could not control, I was prevented from visiting him at the time I had counted on doing so, consequently was among the later visitors. From the published reports of the work I had been convinced of its value and had used it to some extent; so my visit was not for the purpose of being converted but was to personally see his technic and the results in some of his cases.

This technic I shall describe as briefly as possible. A specially devised table is used, at one end of which a rod of half-inch steel crosses and at the other end another rod, on the end of which is a ratchet-wheel and dog fastened to the side of the frame. A canvas hammock is used about a yard long and fifteen inches wide, with one end cut on the bias so that one side of the hammock is seven and one-half inches longer than the other.

At both ends of this hammock there is a wide hem. Through the hem on the bias end the rod at the upper end of the frame is passed, and through the hem on the other end is passed a loose rod; over each end of this rod a rope with a loop at the end is passed, the other end of each rope being attached to the rod at the lower end of the table. This rod also has a handle at the same end, on which the ratchet-wheel is fastened. By turning this handle the ropes are made taut and the canvas hammock can in this way be made tight or loose, as desired. Across the upper end of the table, also, a strap of webbing is passed a little below the upper rod. The table is now ready for the patient.

Two shirts cut from tubular stockinet (Abbott now uses three) are now prepared and put on the patient. Between these two shirts is put the padding. Great care must be used in the padding. A heavy piece is put around the hips to protect the sacrum and the anterior spines. Other pieces are put over the more prominent portions of the ribs, and large pieces around each axilla and shoulder. Then the concavity at the back is filled in with a very large pad made of a number of thicknesses of felt. When the padding is completed the patient is ready to be put on the table.

She is laid on her back on the table, with the convex portion of the spine or ribs resting on the short side of the hammock, the neck resting on this canvas strap which crosses the table and the head between the strap and the rod at the upper end. This, of course, leaves a large vacant space between the long side of the canvas and the concave side of the spine.

A muslin bandage is now passed under the arm on the side of the concavity, across the chest and back, and both ends are made fast around the upper end of the frame on the side of the convexity. Another muslin bandage is put around the hips and the two ends made fast around the frame on the same side as the first bandage. A third bandage is now used, but this one is put around the part of greatest convexity and the two ends of this one around the frame on the opposite side from where the others have been fastened.

While the first two have simply been drawn snug, this one is drawn as tight in the opposite direction as the patient will stand. This makes very strong pressure against the point of greatest convexity.

As there is a secondary compensating curve in the spine, so there is also a secondary compensating convexity of the ribs in front on the opposite side from the posterior convexity. To overcome this convexity another piece of bandage has been stitched to the center of this third bandage and this portion of the bandage is now drawn down toward the floor, formerly by a weight attached to the end, but in the latest tables by the lower ratchet-windlass to which it is fastened.

The arm on the side of the concavity is now drawn up as far above the head as possible and the shoulder drawn forward and held in this position while the cast is being applied. Previous to this the canvas hammock has been loosened and the back allowed to sag as much as possible and now, all the bandages being taut and the body as nearly corrected or overcorrected as it is possible for the patient to endure, she is ready for the cast.

This is put on very thick and strong and, when it has thoroughly set, the patient is taken off the frame and the jacket trimmed. This is one of the most important parts of the work. It is trimmed very short in front and long behind at the bottom and very high on the side of the concavity under that arm but so that that shoulder may be held forward. The other side is trimmed so that the shoulder may drop as much as possible, but still be held back.

A very large fenestrum is cut over the concavity at the back and also one over the depressed ribs in front. This leaves a large space which fills in as correction continues and, as the pressure over the convex portions becomes less from the advance of the concave portion into these fenestra, layers of felt are drawn in to increase the pressure until overcorrection has been secured.

Breathing exercises are a great help in this correction and should be practised regularly. A jacket may be worn as long as it is strong and is accomplishing its purpose. This may be but a very few weeks or it may be several months.

After correction has been secured, systematic gymnastic exercises must be practised daily for from six months to a year at least and at the same time a supportive jacket, preferably of celluloid or leather, must be worn until there is no danger of relapse.

Abbott has accomplished a great deal and the profession owes him much for the advance he has made along this line, but still he does not cure all cases and the treatment is very severe. Others are also doing scientific work along these lines, Meisenbach, McKenzie, Forbes and many others.

I do not wish to finish this paper without saying a word about the Adams jacket which is put on very much after the same plan as the Abbott jacket, the difference being that, after the patient is put on the canvas hammock, the plaster is then applied around the hips and allowed to set. The upper portion of the body is then twisted, by taking the arm on the convex side and passing it behind the back, and the hand grasps the middle rod of the frame on the concave side.

The arm on the concave side then crosses the body in front and above the high shoulder and grasps the upper bar of the frame on the convex side. This overcomes as much as possible the vitiated position and the cast is put on in this position. After having set it is trimmed very much the same as Abbott's cast and the after treatment is very much the same.

The end is not yet and we may hope for advance in this line as well as others, for there is no more earnest a body of men to be found than those who are giving their whole thought and energy to the betterment of the afflicted along this line.

DISCUSSION.

Dr. Ezra C. Rich, Ogden: I can only recall one case of scoliosis in 19 years of practice in Ogden that has not been due to some deformity. I realize it is a subject which largely belongs to the orthopedist. Inasmuch as we have with us today one of the most prominent orthopedic surgeons in the United States, I wish to give away to Dr. Ely, of Denver.

Dr. L. W. Ely, Denver: Years ago I had a class of scoliotics in the Vanderbilt clinic. I worked over them faithfully, trying every idea that was brought up. At the end of my experience I was forced to admit that in only one case had I seen any real improvement, and this was simply a case of ordinary, probably of hysterical lateral curvature; in other words, it was no scoliosis at all. We have all been working along wrong lines and the problem seems to have been simplified, as the real problems in medicine almost always are simplified, by some man who has had the time and patience to go into the dissecting room and examine spines carefully, starting work at the bottom, finding out the function of every part of the spine, and then, on the strength of his laborious work, building up something of value. We owe a very great debt to Dr. Abbott. I haven't seen as much of this sort of work in recent years as I should like, but I have seen some of the cases on which these jackets have been applied and I must say I am astonished.

Dr. D. C. Budge, Logan: Scoliosis is more common than we think. It has been demonstrated, I believe, that 24 per cent. of children are subject to this deformity. As there are two classes, the habitual and the fixed forms, it is essential that an early diagnosis be made because the earlier the diagnosis the easier it is to control the condition. It is simply a deformity and many cases are unnoticed and therefore become very grave before they are brought to the attention of the attending physician.

Dr. Edgar Bates, Ogden: I have been examining the school children in the public schools of Ogden and have been impressed with the great number with some degree of spinal curvature. It is almost always anterior. In practically every case it is due to defective hearing or sight. A child who cannot see well will lean forward in his seat to see the black-board and it doesn't take many years until he is slightly stooping. A defect in hearing will work the same way. A high degree of astigmatism may produce lateral curvature of the spine. The pupil can see better by turning his head and the constant holding of it in that position causes a lateral curvature of the spine. Pupils with adenoids, enlarged tonsils and defective hearing nearly all have slight curvature of the spine.

Dr. Baldwin, in closing: I think most orthopedists will agree with Dr. Ely that, up to a very recent period, if they could get a patient in condition to keep from getting worse, it was practically all that they could do in a case of scoliosis. Probably nobody ever did as much work in the dissecting room on this subject as Lovett, and still he did not find just the right plan of treatment to produce the best results. That scoliosis is more common than has been supposed I think there is no question, but an anterior curve is not scoliosis. I think, if the doctor would examine his cases a little more closely, he would find that what he takes to be an anterior curve is a lateral, with a scoliosis due to the conditions that he speaks of. There is a great deal of work to be done yet along this line.

Does Cardiac Rhythm Determine Blood Pressure Variations? Changes in cardiac rhythm are not the only determinants of blood pressure variations in man. They play a part in the variations of systolic and diastolic pressures, the relative importance of which depends on the degree of arhythmia present and on the depth of respiration which, in itself, causes the systolic and diastolic pressures to decrease during inspiration and increase during expiration. No degree of rate variation can be regarded as a type. The cases range from those in which respiration govern the change of pressures entirely through those where more or less complicated mixtures of heart rate and respiratory influences intermingle to those in which extreme cardiac variations alone determine the pressure changes —C. J. Wiggers, M. D., Jour. of Experimental Medicine, Jan, 1914.

KINKING AT THE FIRST AND SECOND PORTIONS OF THE DUODENUM CONSIDERED AS A CLINICAL ENTITY.*

By N. Wiley Jones, M. D.,

PORTLAND, ORE.

The differentiation of the primitive alimentary tube into separate non-equivalent regions, one lying behind the other, begins with the development of the stomach. In man this has taken place at about the fourth week of embryonic life. It consists of a small, spindle-shaped enlargement of the tube which is surrounded uniformly by the lining membrane of the primitive coelomic cavity. Posteriorly the union of the two layers of this rudimentary mesentery has formed the dorsal mesogastrium and has fastened the stomach to the back wall. The corresponding layers ventrally form the ventral mesogastrium and fasten the stomach to the anterior wall, but with this difference: the liver which has developed as an evagination of the gut just below the stomach and has grown up between the layers, occupies a position between the stomach and the anterior wall. It is covered on all sides by the ventral mesogastrium. (Fig. 1.)

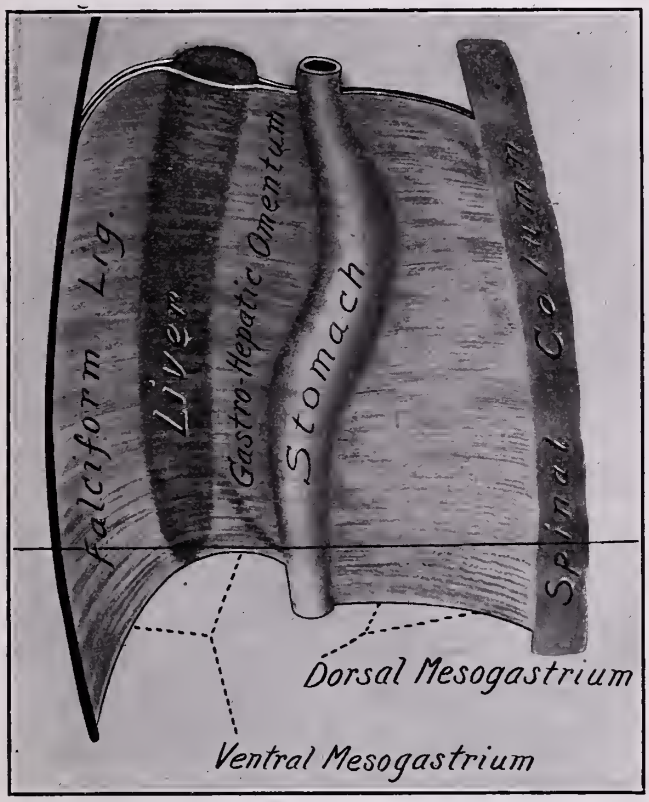

Fig. 1. Schematic profile view of ventral mesogastrium with developing liver. (Modified by Coffey from Huntington).

The enlargement of the stomach takes place on the dorsal surface; but soon, because of the lack of room, this portion rotates to the left and turns downward. The mesogastria are carried with it and are changed to meet the new conditions. (Figs 2 and 3.) The pyloric end of the stomach turns to the right and upwards, while the liver grows rapidly as a fetal organ and takes up the slack of the ventral mesogastrium. Thus the developing duodenum is drawn upward and, as it rotates downward again, it is carried to the back where its peritoneum fuses with that of the posterior wall. That portion of the ventral mesogastrium lying between the liver and the stomach forms the gastrohepatic ligament, and that portion anterior to the liver the falciform ligament. The lesser peritoneal cavity is likewise formed by the rotation and ascent of the distal end of the stomach and its communication with the greater cavity

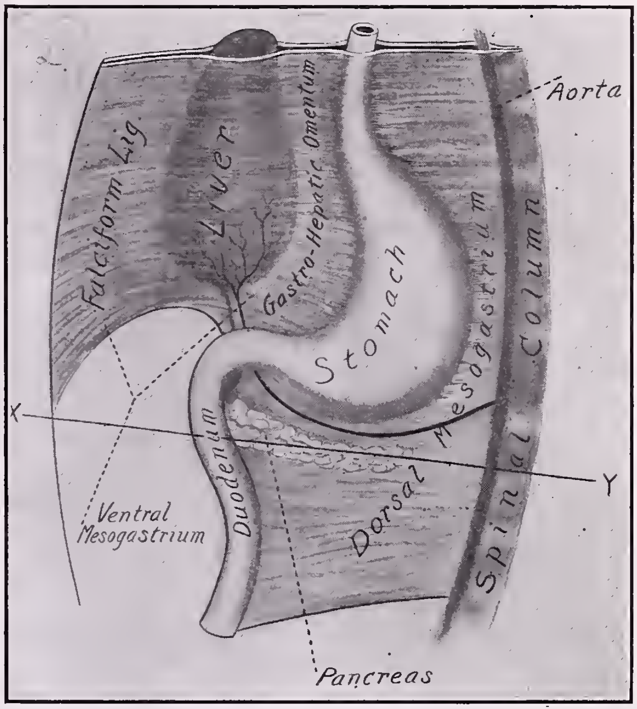

Fig. 2. Relation of liver, stomach and pancreas to the mesogastrium just before rotation. (Modified by Coffey from Huntington).

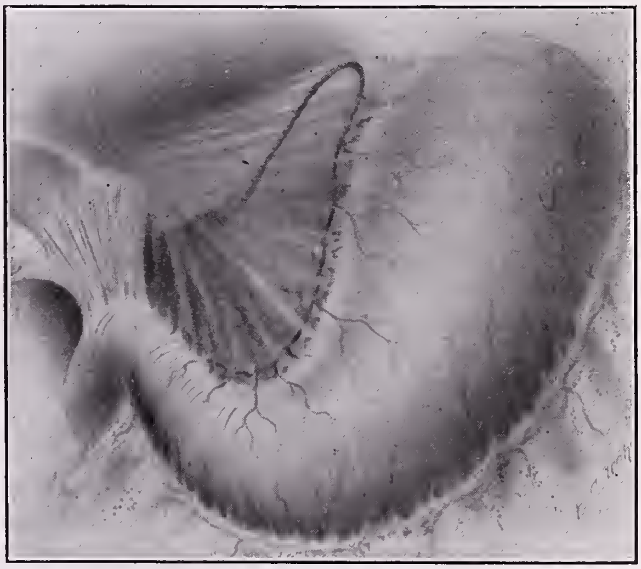

Fig. 3. Relation of coronary vein and peritoneal supports of normal stomach.

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*Read before the Twenty-first Annual Meeting of Idaho State Medical Association, Pocatello, Ida., Oct. 9-10, 1913.

remains permanent as the foramen of Winslow, the upper wall of which is the gastrohepatic ligament. The remains of the dorsal mesogastrium grows downward from the greater curvature of the stomach, forming the great omentum, which in turn fuses normally with the peritoneum covering the transverse colon and gives an additional peritoneal support to it. Thus, in the human adult there exist additional fixed points of peritoneal attachment and peritoneal fusions which do not exist in the ordinary mammal. Certain intermediate stages are found in man-like apes that point strongly to the fact that these peritoneal modifications are for the purpose of permitting man to assume the erect posture.

The stomach of man possesses two firmly fixed points of attachment: the esophagus with its attachment to the diaphragm and that portion of the duodenum which rotates to the back and fuses with the parietal peritoneum, a fusion which has made a portion of this organ retroperitoneal. At the junction of the first and second portions of the duodenum, i. e., at that point where the bowel passes behind the peritoneum, there are found other structures between the layers of this peritoneal fold (primitive ventral mesogastrium) which serve to hold all the more firmly the duodenum in its place. These structures are the common bile duct, the portal vein and the hepatic, gastroduodenal and pyloric arteries. Between these two fixed points the stomach swings like a hammock. Also, is there suspended partly from these two points the weight of the transverse colon by reason of the usual obliteration of the bursa of the great omentum.

Since the two ends of the stomach are normally so firmly fixed one may with reason ask why prolapse of this organ occurs so frequently. From the operating room observations of certain surgeons, more especially Rosving, Lane and Coffey, the living pathology of ptosis of the stomach has seemingly been quite accurately observed. There are essentially two distinct types of gastroptosis. First, the common type characterized by a dropping of the pyloric end of the stomach, the pyloroptosis of Holzknecht, and by usually an accompanying general abdominal ptosis. The factors underlying the production of this form are apparently all of those varied factors which underly general asthenia as a whole, whether the latter be congenital in origin or acquired. The peritoneal tissues are found at operation to be universally relaxed. The parietal peritoneum may even be loose enough to allow considerable sliding, and in case of the pyloric end of the stomach the entire peritoneal structures slip down away from the posterior parietal wall. The cardia for obvious reasons does not drop down, fixation not being due primarily to peritoneal ligaments.

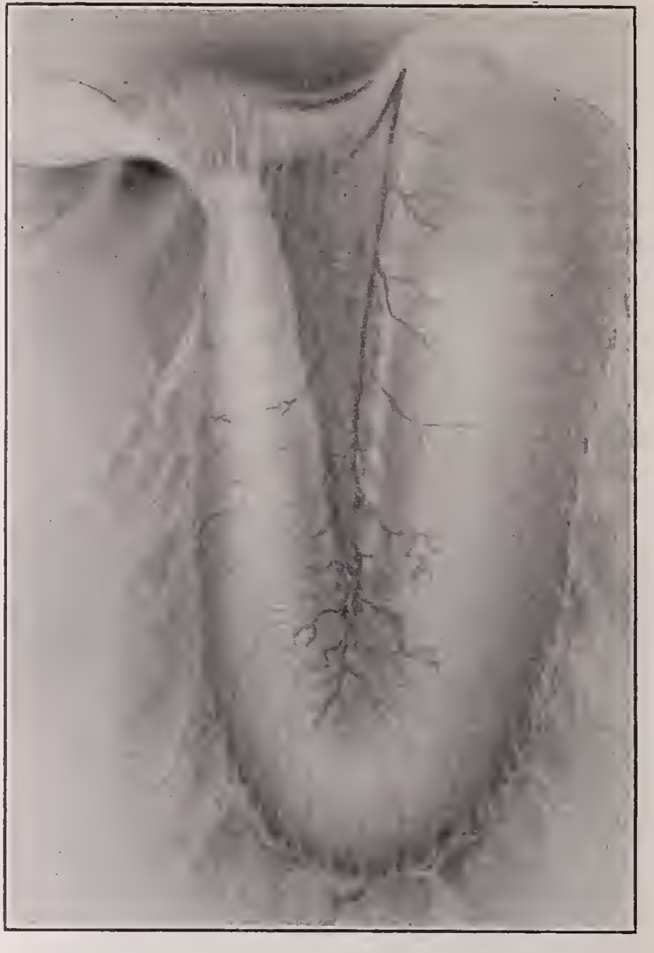

Fig. 4. Kinking and resulting varicosity of coronary vein produced by midline gastroptosis. Pylorus remains widely patent. Duodenum becomes kinked at junction of its first and second portions.

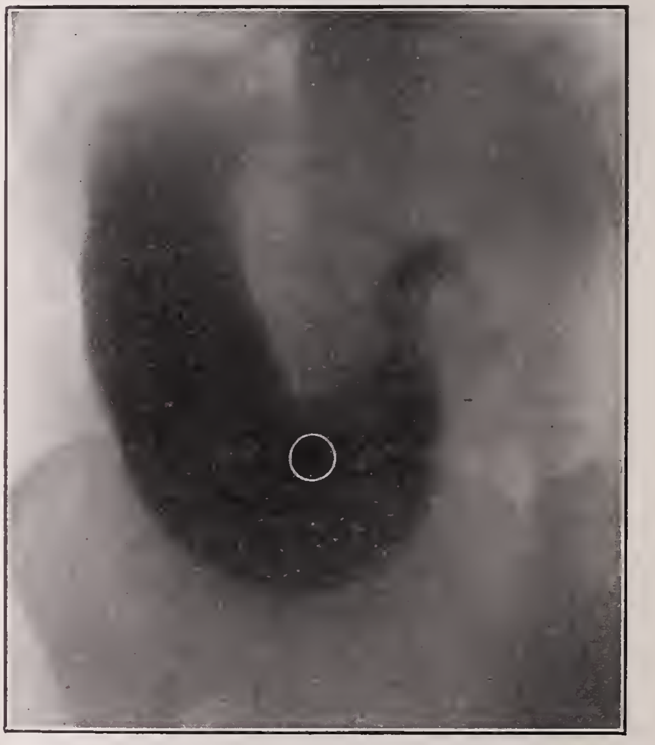

Fig. 5. Kinking at the first and second portions of the duodenum, simulating chronic, periodically bleeding ulcer. Extreme asthenia. End result after operation good.

The second type of gastroptosis is a midline ptosis of the stomach. It is always accompanied by a corresponding subsidence of the transverse colon. The anatomic picture at operation is distinctive. (Figs. 4, 5.) The fixed point of the stomach together with those of the colon flexures and the kidneys are intact. But the middle pyloric portion of the stomach sags in a variable degree, depending upon the amount of stretching which the walls of the organ itself have undergone. The pylorus is wide open and oftentimes there is acute angulation of the duodenum at the junction of its first and second portions. If the duodenal kinking has advanced to such a degree that stasis takes place, then the stretching out of the walls of the cardia permits an acute kinking of the coronary vein at the point near the esophageal opening, where it turns sharply downward and backward between the folds of the lesser omentum.

This blocking produces a marked varicosity of the branches of the vein above it, and is the direct cause of the bleeding which occurs frequently in these cases. This observation was first made by Dr. Coffey on case 2 of the writer's series. This case was of particular importance because a chain of five small, varicosed ulcers were found along the course of one of the dilated branches of this vein, from which severe periodic bleeding had occurred.

When the pylorus is widely dilated the pyloric veins become also somewhat varicosed but in our experience bleeding has never come from them. This varicosity of the gastric veins has been uniformly found in all cases coming to operation. The method of the kinking, of especially the coronary vein, indicates also that an actual stretching of the wall has taken place. The pathogenesis of this type of gastroptosis is seemingly associated with those factors which exert a downward drag on the stomach. Purely traumatic cases which have been produced by the lifting and carrying of heavy weights on the abdomen have been recognized.

The usual type, however, is the case of midline coloptosis with a long redundant colon which has stretched out and pulled down the stomach by the combined influence of the weight of the colon stasis, the general asthenia and the retracted upper abdomen which develops along with and augments the progress of the condition. Coffey has already emphasized the fact that in such a person there is not room enough for the organs of the upper abdomen, and as soon as they are crowded down beyond the waistline they exert an ever increasing drag. For this reason it has been found necessary in many of these cases to expand the upper abdomen in order to obtain room enough to replace these organs and insure their being retained. Colon stasis, however, does not seem to be an indispensable factor in its production for in three cases in our series of twelve, the bowel function was normal and in one an actual hypermotility with looseness existed. But the colon is long and redundant with its fixed points high, so that even with the absence of stasis there can be an abnormal traction exerted.

The writer is well aware that midline gastroptosis does not present a clinical picture which can justify the application of the term "clinical entity" to it. All forms of ptosis are for the most part of slow development. Consequently, there must be in existence widely varying degrees of their formation, cases which possess symptoms as well as those which do not. Just recently a moderately advanced degree of duodenal kinking with beginning varicosed veins was found in a patient who gave no symptoms referable to the stomach, and in whom x-raying did not reveal a labored emptying of it. On the other hand, there comes a time in its development when stasis begins to occur. Then symptoms do exist and bleeding may take place which causes the diagnosis of gastric ulcer to be made and operation to be performed that reveals no ulcer and no understandable reason for the illness. Many cases of duodenal kink with stasis have been operated upon without recognition and without relief. For this reason the writer uses the term "clinical entity" in respect to these cases in order that their significance may be better emphasized and appreciated.

There are certain symptoms which may vary from those of ulcer and, should they be present in a ptotic patient, the true state of affairs may at times be surmised. In the first place the patient may have already found out that he has less pain and distress on lying down after eating. This fact was of importance five times out of the twelve cases observed. It was this fact, combined with the persistent absence of signs of ulcer in my first patient two years ago, which induced me to have repeated screen and plate examinations of the stomach made to explain a case which I could not consider as ulcer. This case was the first distinct example of stomach stasis due to duodenal kinking which had ever come in any way to the writer's attention, although as long as eleven years before he had often talked with Byron Robinson about the subject and had watched some of his investigations of it in the dead house. The latter's opinion, however, that ptosis may produce a kinking of the duodenum over the ligament of Treitz we have never been able to verify. In our experience it has occurred uniformily at the upper fixed point of the bowel.

The second important clinical difference was also worked out on this first patient: namely, that the stomach stagnation is only intermittent. The fasting stomach in the morning after a night's rest contains no food and usually but a few cubic centimeters of fluid. But food is often removed from the stomach after an equally long fast if the patient has kept in the upright position. This explains the uniform absence of sarcinae. Although the necessary conditions for sarcinae growth are present, i. e. stagnation in the presence of free hydrochloric acid, still the stasis is of too short a duration to permit their development. The diagnosis of the condition, that is, as soon as stasis appears, is made definite by x-ray examination. (Fig. 6.) The low position of the stomach with its high outlet, the patent pylorus, and the ineffectual efforts of the peristaltic waves to force the bolus of bismuth nearly vertically up through the pylorus and past the obstruction in the duodenum is readily seen by screening. The x-ray signs of ulcer, as niche symptom, deformation of the pyloric cap, interference of peristalic waves, or in case of duodenal ulcer excessive hypermotility combined with a point of tenderness over the duodenum are all found to be absent. Those cases which bleed, however, are the ones which should be given special attention, for the easy diagnosis of chronic bleeding ulcer may lead one into error. Three times after the writer had once recognized the condition did he fall lightly into this mistake.

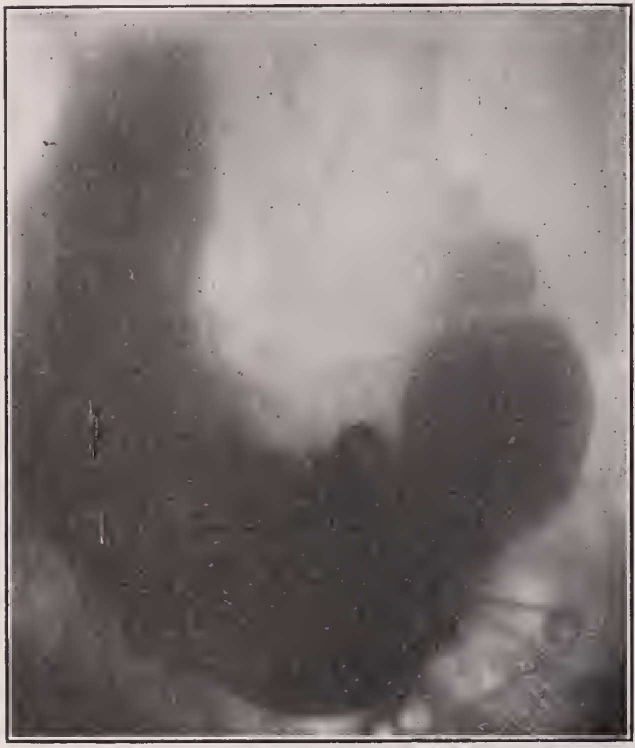
Fig. 6. Same as fig. 5. Moderate asthenia, no bleeding, operative end result good.

There is another morbid condition in this part of the abdomen which may simulate more or less the periodic pain, local tenderness, gas, sourness, etc. of both latent ulcer and midline gastroptosis. This is any factor which can produce a drag on the fixation of the hepatic flexure of the colon and through it on the fixed point of the duodenum. Usually it is produced by the weight of a mobile cecum or a pericolitis of the hepatic flexure which has caused more or less stasis in the bowel below it. Several instances of both have been observed by the writer recently. In one case of marked mobile cecum he made the added diagnosis of duodenal ulcer because there was associated a marked hypermotility of the stomach, and a point of definite tenderness over the duodenum. But there existed no ulcer, and the pain attacks with the local tenderness were relieved by reanchoring the cecum and relieving the drag.

Midline coloptosis with stagnation is one of the few forms of abdominal ptosis which is essentially surgical in nature. If the stasis be at all marked it is useless to try medical measures. Only in three cases in our series has there been sufficient alleviation of symptoms by means of fattening, bowel regulation, mechanical supports, back rest and stomach lavage to justify the patient to go on without surgical relief. In all of these cases the stomach has emptied itself within six hours, although with difficulty. Two patients have not been operated upon and their condition remains the same. Of the seven patients who have been treated surgically, four were previously treated medically with uniform failure. Again of the seven, four are now cured by combined gastro- and colopexy, one is now reaching a good end result by the aid of fattening and bowel regulation, and two are in hospital convalescing from their operations with every prospect of complete cure.

The more in detail and the longer we study the problems of the cure of aggravated abdominal ptosis, the more definite and clearly-cut are the cases grouping themselves and the more accurate are the indications for the successful plan of treatment being manifested. This type which forms the subject of the present paper is a clear-cut type with clear-cut indications for its treatment. It is curable although it has often been mistreated. Also more and more is the conviction becoming fastened upon the writer that every form of abdominal ptosis with symptoms is a curable condition. The cure only awaits the proper recognition of its underlying principles and the methods of meeting them.

SUMMARY OF CASES.

						CLINICAL SYMPTOMS.										X-RAY FINDINGS.		OPERATIVE FINDINGS.				
Name.	Sex.	Age.	Occupation.	Pregnancies.	Duration of Symptoms.	Periodical	Pain.	Local Tenderness.	Soreness.	Gas.	Vomiting.	Bleeding.	Bowels.	Loss of Weight.	Stomach Findings.	Stomach.	Colon.	Diagnosis Verified.	Varicose Veins.	Ulcers.	Erosions.	End Results.
A. R. K.....	f.	28	Housewife	0	5 yrs.	+	++	+	+++	+	+	0	Con. Spas. +	20 lbs.	O. K.	Midline Pt. Duodenal Kink Stag. 6 Hrs.	Extreme Midline Pt.					Same
B. V. B.....	m.	34	Watchmkr	—	10 yrs.	+	+++	+	+	+++	++	++++	Constip. +	10 lbs.	O. K.			0 (ulcer)	+++	5	0	Good
J. E. D......	f.	44	Housewife	1	20 yrs.	+	+	0	+++	+	++	+0	Constip. +++	12 lbs.	O. K.	Midline Pt. Duodenal Kink Stag. 0 Hrs.	Extreme Midline Pt. Mod. Mobile Cecum					Fair by Lavaging at Beginning of Attack.
G. F........	f.	33	Servant	0	12 yrs.	+	+	++	++	+	++	++++	O. K.	15 lbs.	O. K.			0 (ulcer)	+++	0	+	Good.
R. K........	f.	18	At Home	0	8 yrs.	+	+	++++	++	0	+	+	O. K.	10 lbs.	O. K. Blood			0 (ulcer)	+++	0	+	Good.
M. L. T.....	f.	27	Stenog.	0	Since Oct., 12	+	++	++	0	+++	0	0	Constip. ++	15 lbs.	O. K. Blood +++	Midline Pt. Duodenal Kink Stag. 6 Hrs.	Midline Pt. Cecum O. K.	+	+++	0	+	Good.
K. B. K......	f.	30	Bookkepr.	0	10 yrs.	+	+	0	+	0	++	0	Loose ++	14 lbs.	4-6 oz. Fasting no	Midline Pt. Duodenal Kink Stag. 6 Hrs.	Midline Pt. Cecum O. K.	+	++	0	0	Becoming Good.
W. W. B.....	f.	34	Housewife	0	10 yrs.	+	+	0	++++	0	0	0		22 lbs.	O. K.	Midline Pt. Duodenal Kink Stag. 6 Hrs. +++	Midline Pt. Cecum O. K.					Same.
R. F........	m.	47	Clerk	—	23 yrs.	+	0	0	+	+	+++	0	Irreg.	15 lbs.	O. K.	Midline Pt. Duodenal Kink Empties	Midline Pt. Cecum O. K.					Relieved by Dieting and Lying Down at Begin-
A. L. A.....	f.	67	Housewife	5	23 yrs.	+	++	0	+++	++++	+++	0	O. K.		O. K.	Midline Pt. Duodenal Kink Stag. 6 Hrs. ++	Colon O. K.	+	+++	0	0	Becoming Good.
E. B........	f.	30	At Home	0	12 yrs.		+++	+++	+++	+++	+++	0	Constip. +++	43 lbs.	O. K.	Midline Pt. Stom. Empties	Ext. Midline Cecum Fixed Ilum Stasis+	(have kink)	++	0	0	Becoming Good.
J. H.........	f.	51	Housewife		12 yrs.	+	+	++	++	+++	++	0	Constip. +	11 lbs.	O. K.	Midline Pt. Stom. Empties	Midline Ext.					Improving Under Fattening.

Cases 1, 2, 6, 8 and 9 could relieve all pain and distress by lying on back or right side. Sarcinae were not found in any case. By X-raying none of the findings of ulcer, i. e., niche, blocking of peristaltic waves and deformation were observed.

FURTHER REMARKS ON THE DIAGNOSIS OF CHRONIC STOMACH TROUBLES.

By Kenelm Winslow, B.A.S., M.D.,
SEATTLE, WASH.

Our ideas of digestive diseases have undergone a most tremendous change, owing to the revelations of the operating table in living pathology and to the x-ray in enabling us to actually see the position, form and motivity of the gastrointestinal tract. On turning over the pages of even the most recent textbook on diseases of the stomach, the thoughtful reader is at once impressed that all the diseases described are not diseases at all, but only symptoms, with the exception of ulcer and cancer. And many are only symptoms of symptoms, as hyperacidity in pylorospasm.

Let us run through the list briefly with this idea in mind. Chronic gastritis has been found to be secondary to general diseases of the lung, heart, arteries, and to ulcer, pyloric stenosis, cancer, etc., in 1306 autopsies at the Royal Victoria Hospital. Atony is present in all cases of gastroptosis and in pyloric obstruction. It is secondary to all exhausting diseases (as phthisis), constipation, and many abdominal lesions, as gall-bladder trouble, ovarian disease, renal calculus, etc. Pylorospasm and stenosis are always secondary conditions. Spasm occurs in gall-bladder trouble, ulcer, and chronic appendicitis; transient spasm in acute indigestion. Stenosis is caused by ulcer, tumor or adhesions, except in the infantile type.

Gastroptosis is not a stomach trouble, but is part of a general faulty development with unstable nervous system and characteristic build, including the long, narrow chest and belly; the stoop shoulders; bulging hypogastrium; narrow costal arch; ptosis of stomach and colon; short intestine; colon with free mesentery; failure of rotation of the ascending colon, and other embryologic defects. The sagging of the stomach causes stretching and atony, the unstable nervous system gives rise to gastric neuroses, hence all three—gastroptosis, atony, and neuroses—form one large group constituting about one-third of all digestive troubles.

Hyperacidity and hypersecretion are now admittedly secondary conditions. Moynihan goes so far as to say that hyperacidity is but another name for duodenal ulcer. Hyperacidity exists in about one-half of all dyspeptics. In only 20 per cent. of cases are we unable to find the cause. Any gastric disorder wherein the motor functions are interfered with is apt to lead to hyperacidity, as in atony and pylorospasm from gallstones, ulcer and chronic appendicitis. The percentage of acid in the gastric contents is about the same in gall-bladder and appendix cases as in ulcer (Graham and Guthrie). The same may be said of hypersecretion which occurs in interference with the motor functions and is almost always a symptom of pylorospasm from ulcer, gall-bladder trouble, chronic appendicitis and cancer.

The etiology of achylia is in dispute. How often it is due to atrophy following gastritis and how often a functional disturbance we do not know. Apparently only 3 per cent. of achylia cases are malignant. Achylia is very common in gall-bladder trouble and gastroptosis and is generally associated with other diseases.

Nervous dyspepsia is viewed with suspicion in these days and gastralgia is perceptibly withering away in our textbooks, although its feeble offspring remains as a stumbling block to students. Three to 15 per cent. of stomach troubles may be allowed to be neuroses (Fenwick, Lockwood). Many of them are eventually cured by the knife.

Neuroses are secondary to enteroptosis in a large percentage of cases. The diagnosis of neuroses depends upon the following facts: The absence of organic lesions, the improvement wrought by favorable environment, the insusceptibility to indigestible food, the great variability in the gastric symptoms, general nervous instability, a history of early dysmenorrhea and finally relief by the use of chloral and bromides.

Now to consider the laboratory aids to diagnosis. Whether gastric analysis will be helpful or misleading depends upon whether one keeps ever in mind the purely symptomatic character of the findings in most cases. The feeling is still prevalent that the findings of gastric analysis are tantamount to a discovered diagnosis. The presence of blood may make us err on the positive side in the diagnosis of ulcer or cancer, while the finding of hyperacidity may lead us into a negative error in regarding this as the entity, while in reality but a disturbance produced by an organic abdominal lesion which we overlook.

Our attitude in approaching a gastric disorder will at first be that of regarding it as a symptom of some other disease, and we will then proceed to get a careful history from the earliest years and follow this with a painstaking physical examination, ignoring for the time the existence of stomach trouble. Particular attention should be given to palpating the gall-bladder and appendix. The most valuable use of the stomach tube is that gained by emptying the stomach in the morning after an evening meal containing partially cooked rice and raisins. Food remnants are not present in the fasting stomach except in pyloric spasm and stenosis, notwithstanding the teaching of the textbooks to the contrary in dilatation and atony. The x-ray should be used in all doubtful cases of stomach trouble. Besides picturing the form and position of the stomach and intestines many other most valuable points may be gained. A residue of over one-fourth of the bismuth meal after six hours may be found in atony and hyperacidity, but if half or more of the meal be present at this time, obstruction exists.

There are two common forms of stomach seen—the fish-hook and cow-horn. They have some diagnostic significance. The fish-hook stomach is normally seen in most women and some men and is more often associated with enteroptosis and ulcer. The cow-horn stomach occurs more often in men, and cancer is found more often in this form. X-ray is proving of great value in ulcer and cancer. In ulcer one may see an erosion or diverticulum due to perforation, a six hour bismuth residue, displacement to the left by adhesions, as 46 per cent. of ulcers are at the pylorus (Smithies), the fish-hook form, with bismuth at the lower pole owing to atony. Then a constriction often appears on the greater curvature opposite the ulcer.

In cancer irregularity in outline, filling defects, diminution in size, and obstruction or rapid emptying are common signs. Many useful points may be seen with a fluoroscope not shown on a plate, as peristalsis, antiperistalsis, mobility of the stomach and functioning of the pylorus. The peristaltic waves, starting every 10 to 20 seconds, travel from the fundus slowly along the greater curvature to the antrum. High acid increases, low acid diminishes the waves in depth and number. In obstruction the waves are greatly intensified. Skiagraphy of the gastrointestinal tract has become a fine art and specialty as the remarkably systematized work of Carman and others exemplify.

Hertz and Pawlow have shown that the mucous membrane of the digestive tract is insensitive to touch and that of the stomach and gullet insensitive to acid in health. The lower part of the gullet is sensitive to heat and alcohol. The pain in high acid is thought to result from increased peristalsis and tension of the stomach wall.

The x-ray shows pain may be produced by hasty eating in two ways—by too rapid distension of the stomach by food and by swallowed air. In atony the stomach is stretched more readily than a normal stomach, hence it is larger.

Twenty-five per cent. of chronic stomach troubles can not be correctly diagnosticated, even by the elect. Ulcers often do not give rise to symptoms or how can pathologists like Wilson and McCarthy discover ulcer to exist as a cause of cancer in 50 to 70 per cent. of cases, while clinicians, such as Fenwick and Lockwood, can find an ulcer history in but 3 to 7 per cent. of cancer patients. Moreover, duodenal ulcer is found in 1 per cent. of all autopsies (Codman), but is not recognized with anything like this frequency during life.

It is notoriously impossible to diagnosticate gastric cancer in the early stages in a large proportion of cases. Cancer of the body does not cause obstructive symptoms and these and tumor are our guides. It is at present possible to diagnose only about one-third of the cases of cancer in time for a resection, another third in time for a palliative operation, and a final third remains for a hopeless exploration (Mayo).

Another class of cases are too complicated for diagnosis, as late cases of gall-bladder trouble and ulcer, with adhesions and perforation or associated lesions. The frequency of associated abdominal lesions is not sufficiently appreciated. Snithies has recently reported associated disease of the appendix and gall-bladder in two-thirds of 140 cases of gastric ulcer operated on at Rochester. These have probably a common pathologic origin in colon bacilli poured out from an inflamed appendix entering the bile from the portal circulation. It is common to see cholecystitis follow within a few years after appendicitis. The association of biliary and pancreatic disease is well known and of ulcers of the stomach and duodenum.

How shall we proceed in the diagnosis of stomach troubles? First let us weed out the general diseases, as phthisis, pernicious anemia, Bright's disease, Addison's disease, tabes, spondylitis, also eye strain, etc., which account for about one-third of chronic stomach troubles. Then we find out whether there is real pain or not. Real pain which keeps the patient awake at night is more apt to mean an organic lesion. Next one should examine the patient for an enteroptotic build. Physical examination is usually sufficient.

If this be present, the gastric disorder is more apt to be functional, although this remark must not be taken too literally. If we can eliminate general disease and enteroptosis we have cut out about two-thirds of the cases. Of the remaining third we have left the abdominal lesions, particularly appendicitis and gall-bladder troubles, pelvic growth and tuberculous lesions, and the true gastric diseases—ulcer and cancer, constituting but 10 per cent. of all chronic stomach troubles.

To summarize:

(1). All the entities or the diseases of the stomach to be found in textbooks are in reality in most cases only symptoms, i. e., gastritis, atony, hyperacidity, hypersecretion, achylia, neuroses, with the exception of ulcer and cancer.

(2). Gastric analysis gives many practitioners a false idea that they have achieved a diagnosis instead of a symptom and often merely a symptom of a symptom. The finding of food remnants in the fasting stomach is the most important result of the use of the stomach tube.

(3). The recent improvements in x-ray technic have made this means of great value in the diagnosis of ulcer, cancer, ptosis, atony and pyloric sufficiency.

(4). The great frequency of associated abdominal lesions is not yet properly appreciated and makes diagnosis difficult and often impossible.

(5). The elimination of general diseases and enteroptosis, with its allied atony and neuroses, in the diagnosis of stomach troubles eliminates two-thirds of the cases of chronic stomach troubles. Of the remaining 30 per cent., 20 per cent. of the cases are secondary to abdominal lesions outside of the stomach and only 10 per cent. are true diseases of the stomach—ulcer and cancer.

PLAUT VINCENT'S ANGINA, WITH A REPORT OF FIVE CASES TREATED WITH SALVARSAN.

By R. A. Greene, M. D.,

SPOKANE, WASH.

Vincent's angina is an affection of the mouth and throat caused by certain spindle-shaped or fusiform bacilli and by spirochetae. Both micro-organisms are occasionally found separately on healthy mucous membranes of the mouth but may become pathogenic after long illness, general or local affections, carious teeth or operative procedures in the mouth. Authorities differ as to the contagiousness of the disease, though epidemics have been reported.

The most commonly involved area is the tonsil or pillars of the tonsil, especially at the junction of the anterior and posterior pillar. However, the uvula, palate, pharynx or gums may be involved. The affection appears sometimes in an ulcerated and oftentimes in a diptheroid form. The ulcers show an irregular, hard, crater-shaped edge with a tendency to spread into the deeper tissues more than along the surface. The adjacent mucous membrane is usually inflamed and edematous. The membrane covering the ulcer may be quite adherent and bleeds easily when removed, simulating a diphtheretic membrane.

Occasionally there will be a number of patches of a grayish white color surrounded by a red areola but separated from each other by healthy tissue. These areas will heal, only to break out in some neighboring place; and just as the disease is apparently under control it will again break out, making it in some cases decidedly chronic.

The ulceration at times is very extensive, destroying the whole or a portion of the tonsil and often invading the pillars and palate. Large spirochetae and fusiform bacilli are constantly found in these lesions.

The synchronous appearance of lesion and micro-organism is regarded as characteristic of Plaut Vincent's angina. While the severe type of the disease can scarcely be confused with any form of syphilis, the mild and sometimes very chronic course of Plaut Vincent's angina can resemble an ulcerated syphilitic process and make the diagnosis very difficult. The finding of the treponema pallidum in the lesion or a positive Wassermann will render the decision for syphilis. On the other hand, the presence of the coarse, thick spirochetae, associated with fusiform bacilli, is not necessarly diagnostic of Plaut Vincent's angina, as they might also be present in ulcerated syphilis of the mouth (Zinsser, Diseases of the Mouth).

The Plaut Vincent disease may resemble a chancre of the tonsil. The fact that it runs a slow course, gives relatively little trouble, and frequently causes involvement of the submaxillary lymph nodes, may make the diagnosis difficult. The diphtheroid form may simulate the membrane caused by the Klebs-Löffler bacillus and may be associated with it as in one of the cases I shall report, though one authority I discovered in my readings claims the two are never found together.

Diagnosis. The diagnosis of the disease is made positive by the discovery of the typical bacteria—the fusiform bacilli and the spirochetae, in absence of the treponema pallidum and the Klebs-Löffler bacillus. No doubt a good many cases in both children and adults, suspected of being diphtheria but giving a negative culture, are cases of Plaut Vincent's angina.

Symptoms. The usual symptoms are of a subacute or mild tonsilitis, headache, general malaise, chilly sensations and temperature varying from normal to 102.5°. Or there may be no constitutional disturbances, the patient complaining only of more or less pain in swallowing; or he may have discovered the yellowish patch in his throat while looking at it with a mirror. Occasionally the symptoms are most violent, great pain in swallowing and talking, breath fetid, more or less gastric disturbances, submaxillary and cervical glands enlarged and tender.

The disease is acute, subacute and often chronic, the ulcers persisting for weeks and months. One attack is likely to be followed months or even a few years later by a recurrence.

Prognosis. While most attacks are more or less mild, the disease tends to persist for several weeks or months and relapses may occur at any time. Complications are seldom troublesome and a fatal issue is not to be expected unless the larynx or trachea becomes invaded, as in a case reported by H. W. Bruce, where the patient died on the sixteenth day of the disease, the sloughing involving the fauces, pharynx, larynx and trachea. Arrowsmith has reported three cases, in one of which the disease extended over the soft palate and epiglottis, and in another the submaxillary gland became intensely swollen.

Treatment. This in many cases is unsatisfactory. Tr. iodin, as advocated by Vincent, applied to the areas several times daily seems to give as good results as any local treatment. Silver nitrate, in strengths from 10 to 30 per cent., is used, as are also various chemical cauterizing agents, together with the galvano-cautery. Gargles and sprays seem to exert little or no effect in most cases. It was after several months disheartening treatment of one case, on which I used everything I could think of, that I decided to try salvarsan. The result was so prompt and pleasing that I decided on the next severe case to use the same treatment. I have now five cases to report.

Case 1. Mrs. B. came, complaining of sore throat of two months' standing. The crypts of the tonsils were found to be chronically diseased, and after a couple of weeks of treatment of throat the tonsils were enucleated under ether anesthesia. Patient lived out of town and after throat was healed returned to her home. Three weeks later she returned, complaining that the throat had never entirely gotten over being sore, and that the last few days it had gotten decidedly worse.

Inspection showed a deeply cut ulceration at the junction of the anterior and posterior pillars, involving also the side of the uvula. Surface was covered with a dirty grey membrane which bled slightly on removal. Patient had a temperature of 101.5°, some malaise and headache, and slight chilly sensations. Examination of slide made from throat showed Klebs-Löffler bacilli, which was verified by culture. Patient was given antitoxin and isolated until culture from throat was negative.

The ulceration, however, had not cleared up and several fresh patches appeared on the anterior pillar and palate of the opposite side. A Wassermann taken at this time was negative, as was also a specific history. However, a smear from the throat showed the thick spirochetae and fusiform bacilli typical of Vincent's angina.

The throat was treated daily for a month with tr. iodin, strong silver nitrate solution, trichlor acetic acid, gargles, formamint tablets, etc., without any improvement; in fact, without checking the progress of the disease, as at this time it had extended up on the palate and the ulceration had perforated through. A considerable portion of the uvula was also gone. Being rather discouraged with the results of local treatment by this time I decided to try salvarsan. The result was surprising. In a couple of days the throat showed signs of improvement, and in six days was entirely healed. That was over a year ago and there has been no return of the trouble.

Case 2. Mr. J. County case referred to me by Dr. Nuzum. Patient had been in hospital for three weeks with a badly ulcerated throat, a portion of left tonsil having sloughed away; slight patch on pharynx; some enlargement of cervical glands on left side. Wassermann negative. Smear of throat showed spirochetae and fusiform bacilli. Salvarsan was administered intravenously and throat cleared up entirely in six days.

Case 3. Referred to me by Dr. McDowell. Persistent sore throat for one month. Inspection showed ulceration in one tonsil and pillar about the size of a dime, covered with a membrane which bled easily on removal. No specific history. Smear showed abundant spirochetae and fusiform bacilli. Salvarsan was given intravenously and throat cleared entirely in six days.

Case 4. Referred to me by Dr. Tooker for diagnosis. Patient, a young man about twenty-four, had had recurring attacks of sore throat. Constitutional symptoms not noticed, nor was the soreness proportional to the amount of ulceration. One tonsil was ulcerated out entirely, almost as clean as though it had been enucleated. On the opposite tonsil and anterior pillar was a large irregular ulceration covered with a grayish membrane. Wassermann negative. Smear showed abundant spirochetae and fusiform bacilli. Salvarsan advised and administered. Throat cleared up in seven days.

WHY THE CYSTOSCOPE?*

By John Besson, M. D.

PORTLAND, ORE.

A young married woman, 28 years old, with one child 7 years of age, comes to you and asks help for her bladder trouble. For six months she has urinated as frequently as every fifteen minutes, night and day, and has never held her water longer than one hour during that time. She has had many similar attacks of more or less duration, with intervals of absolute comfort for the past nine years. Never before has an attack lasted as long as now. In the past four months she has consulted five doctors, all of whom have variously treated her bladder for its inflammation but to no avail. Two weeks ago she consulted another doctor who found albumin, and told her that it was not her bladder but her kidneys at fault, and gave her a Bright's prognosis.

She is a well nourished individual, in fact, rather robust looking. What are you going to do for her? That's what she wishes to know! Examine her urine? So did your brother practitioners, some of them, and found it alkaline with pus and bacteria. They all tried internal medication and washed out her bladder with silver nitrate. The last one only made a cold nitric test, and said kidneys.

Now, what will you do? Send her to a specialist! Why don't you do that with all your cases who have already seen two or three good doctors before you? That's why the cystoscope!

If you know how to pass a sound you can look through a cystoscope and see the inside of the bladder. You'll learn then that an inflamed bladder does not look like an inflamed pharynx, but like a normal bladder plus very discrete little patches of congestion, inflammation and erosion. Mind you, any one who can pass a sound may observe this much.

Some practice, then, will enable you to see the most enchanting phenomenon it is the pleasure of the diagnostician to watch—the efflux of urine from the ureteral opening. This little dimple on a mound, in appearance not unlike the vulva of a Lilliputian virgin, at each angle of the base of the trigone, puckers up, swells and then relaxes with an outward gush and a swirl of urine, resembling an injection of glycerin into water. Another wonder of nature's routine which, like many a flower, is born to blush unseen by the majority of us at least. At this point is the place to get most of one's cystoscopic experience and, as in the perfecting of every diagnostic measure, to get able to interpret the findings.

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*Read before the Thirty-seventh Annual Meeting of the Oregon State Homeopathic Medical Society, Portland, Ore., Oct. 22-23, 1913.

Beside an acquaintance with several different normal ureteral openings, you must develop a rogues' gallery of ureteral mouths, which knowledge will usually tell you, e. g., from which kidney comes the tubercle bacilli, even before you pass the ureteral catheter.

To revert to our patient, being the seventh doctor, this time you inform the patient that more mistakes are made by not looking than by not knowing, and then proceed to make a positive diagnosis, before which one should not undertake the treatment of any bladder case. Her bladder you find, has many inflamed spots, and so numerous are they in the region of the trigone as to present an almost solid inflammatory area. However, while you readily perceive the right ureteral opening and easily catheterize it, the left is almost impossible to find by reason of the marked edema at this corner of the trigone.

By patience you are soon rewarded by a fine, milky gush from the midst of this edematous mound which, by watching again, leads your catheter to this left ureter. Withdrawing the cystoscope, the catheters are directed into a right and left bottle, and after an hour the right bottle contains an ounce of clear, amber urine, while the left shows but three-fourths ounce of watery urine with heavy purulent sediment already entirely precipitated, of which every appearance is diagnostic. A smear from this sediment shows many tubercle bacilli in every field, in contradistinction to the genrally accepted opinion that great perseverance and skill is always required to find this microorganism in kidney cases.

The patient's history now becomes of more than passing interest. You are surprised to find that she has not had pain in the kidney region, although she does recall an occasional dull ache in the left hypochondrium. Keeping her in the hospital for several days discloses that she is absolutely afebrile and never has night sweats. Palpating her kidneys develops the fact that, if there be any tenderness or enlargement, it is of the right kidney, which is not unusual, though the well kidney hypertrophied by compensation is often more sensitive than the sick one, and you are glad that the cystoscope saved you from pulling the wrong tooth.

This woman, rested now by her sojourn in the hospital, is symptomatically much improved. However, every one of the constant contractions of her bladder is squeezing some tubercle bacilli into the mouth of her good ureter and that is the way this grave, though largely unilateral disease, becomes bilateral.

Despite your warning that she is dangling her good kidney upon a very fragile thread, she decides to have "nothing done until she has to." She promises to keep in touch with you, and from time to time tubercle bacilli can easily be demonstrated in an ordinary sample of urine, when, a month later, you can hardly believe your eyes. She brings a normal-looking specimen of urine which shows little sediment and no tubercle bacilli.

What has happened? Just what occurred to Mrs. L.? She presented a history until a month before she was brought to the Sellwood Hospital, identical with that of our patient. For six months a doctor had irrigated her bladder every day or so. She says her urine was bad. Her doctor might have found tubercle bacilli by merely certifying and staining the sediment. He couldn't have looked, though, for he continued to wash the bladder. When she came to us there was no pus in her urine but she had a large abscess of the left kidney, which we merely evacuated, as she was very weak.

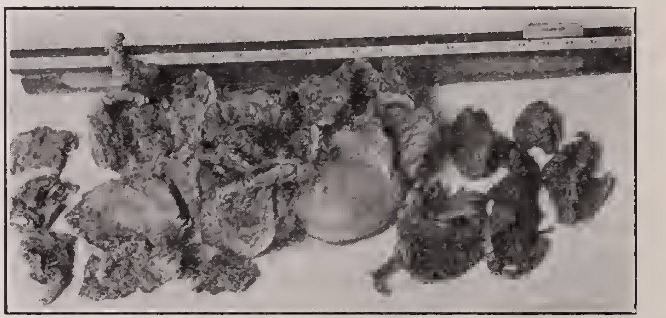

Fig. 1. Kidney a lobulated shell full of pus.

Our first patient has had good drainage if nothing more but, if her ureter becomes occluded, she will develop a pus sack like Mrs. L. Here is Mrs. L.'s kidney. After seven weeks building up we removed it, first of all catheterizing her good kidney and getting its status. (Fig. 1.)

If you want to operate only on patients to get them well, it is just as important, mark you, to know the function of the kidney you purpose leaving behind as it is to make a diagnosis. You are going to remove a tuberculous kidney, to be sure, if you can leave a good one for the patient to work on. No other method of treatment can be considered today.

What is wrong with a boy of 18 years, who at 10 years developed dysuria with frequency and then periods of hematuria? Several months later his doctor passed a sound and shortly after the boy developed retention; seemed doomed to die, when his scrotum, which was enormous, was opened up, freeing the pus and urine. Consulting-doctors later differed on the diagnosis, one calling it tuberculous kidney, another diagnosing a growth in the neck of the bladder, which he gets the privilege of cutting for but does not deliver.

For six years this boy never holds urine longer than one hour, day and night, and by spells must pass it every twenty minutes, with great pain at the end of the penis. Well, medicines, doctors, sounds, chiropractors and I. He ran the gamut.

By reason of a very sensitive prostate and pocket anterior to the scrotum, holding one-half ounce and communicating with the urethra, after consulting a specialist—a urologist—I was guilty of a perineal section to divert the stream, close the pocket and cure. You may learn here that pockets and fistulae of the penile urethra are hard to close.

He still has the pocket. All the operation did for him was to allow a 26 F. sound where but 18 could be used previously. This boy then taught me the cystoscope—a hard case—his bladder never holding more than two ounces, while at least five are required for a satisfactory examination. The right ureteral opening, easily found, was of the golf-hole nature, meaning long continued ureteral disease, resulting in contraction and shortening of ureter, pulling in the lips, and giving a crater-like opening, from which shreds and flakes poured out of the golf-hole at intervals, there being no mouth to pucker up and spurt.

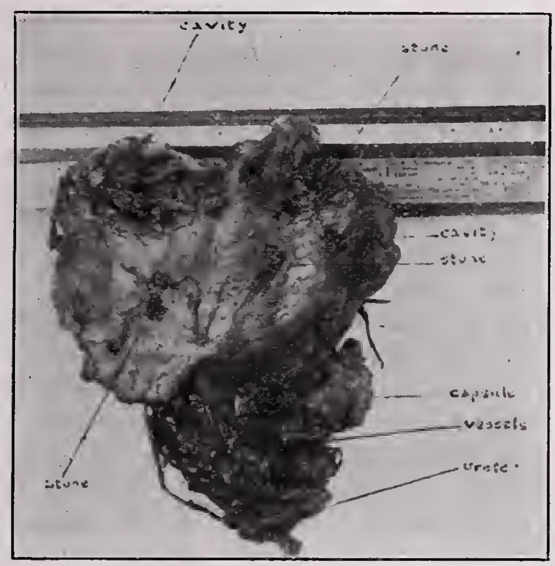

Fig. 2. Kidney cut longitudinally.

In months I could not catherterize the left ureter and called on a most capable urologist who immediately suggested the expedient of general anesthesia,, and succeeded in catheterizing my old favorite right ureter. Culture showed mixed cocci and colon bacilli, from which vaccines were prepared and used. Months of this with no results just made me catheterize his other ureter, and I have since done so many times, showing almost normal urine and five-sixths of his output coming from the left kidney.

Here is his right kidney, so different from the other variety. Is it tuberculous? Very likely. Just as some lungs develop an ulcerative tuberculous process, killing in six months, while others show a fibroid phthisis, dragging along for decades, so Mrs. L.'s kidney was the ulcerative type and this is the fibroid, hardly any parenchyma remaining. (Fig. 2.)

This thimble-like abscess at the upper pole poured the pus down the boy's right ureter. We removed six inches of the ureter, injected phenol into the stump and ligated it so that the wound healed without leaving a suppurating sinus from the ureteral stump. You will notice the stone formation and, although an acid urine containing pus cells often means tuberculous kidney, here was an alkaline urine with marked phosphaturia.

Now, will he get well? His general health is much better, but his symptoms are little improved after three months. He has several ulcers, probably tuberculous, in his bladder which need thorough treatment in contradistinction to a case like Mrs. L.'s, where the bladder is but superficially affected and promptly cleans up on removal of the kidney.

Tuberculous kidney alone is reason enough why the cystoscope, but, if you want more, take that condition, curious by reason of its etiology, pyelitis of pregnancy. The woman at six months acts like a suppurative appendicitis, temperature 103°, great pain and other cardinal symptoms, and you suspect a retrocecal appendix, until you examine her urine which is full of pus cells. To be sure, you know which kidney pelvis is affected, but how will you treat it? Medicinally, and what else? The high fever may last a week and longer; a ureteral catheter in the pelvis of that kidney can deposit a silver salt there which will help your other treatment as much as local treatment of any infected wound.

Cystoscopy of your cases of cancer of the uterus will give much valuable prognostic information. How can you do a complete operation (I emphasize complete) for the average carcinoma uteri without first catheterizing the ureters?

Or, again, a young athletic man has abdominal distress, particularly about the region of the descending colon, is slightly constipated, calls it gas and takes an enema with some relief. The distress comes periodically for three or four days and makes him sweat and feel weak at times. On questioning him you find he has frequency of urination which he attributes to nervousness, although there is a tendency for the abdominal distress to dart down the groin into the penis. A radiograph proved negative.

A cystoscope, a ureteral catheter pushed into the left ureter discloses apparently nothing, but he is instructed to watch his urine carefully. Twenty-four hours later he brings in this little pebble. Ureteral catheters have been known to dislodge stones!

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EDITORIAL

ANOTHER SCHEME TO SOAK THE DOCTORS.

It is notorious that doctors form a good share of the easy marks for the get-rich-quick promoters. The contributions which they have in the past delivered to those selling all kinds of devices for making much out of little would total a very large sum, if gathered in one mass. This is so true that they are continually swallowing the bait offered by various schemers which a conservative business man would reject at the first nibble. It is only necessary to remind the doctors of Oregon, Washington and Idaho of the defunct and mal-odorous Empire Life to suggest how many are in that class of suckers who are born every minute. If you are among that number, gentle reader, you will recall how you were induced to buy a block of stock in this company on the assurance that you were to be enriched from the examinations of a large portion of the citizens of your town who were to secure the valuable policies of this company. You will recall the shock which you received the following week, when you learned that most of your fellow doctors had also contracted for this same exclusive privilege.

Another buccaneering assault on the profession of these three states is now being instituted by some of the former officials of this defunct company, this time under the euphonious and seductive name of the Mutual Health Association. Judging from its prospectus and information obtainable, the doctors have thus far been worked rather than the general public. The scheme in brief is as follows: The doctor who agrees to become a sucker purchases $500 worth of stock from the association, of which he pays $250 in cash. He is then to be made physician of the company and will treat the patients thus sent to him, charging the regular fees for services. The latter, however, are to be collected by the asociation, seventy-five per cent. of which will be retained to liquidate his unpaid stock. Easy, isn't it? You do the work and the other fellow collects the fees for you. Suppose half the doctors of your town have taken on the same contract, where do you get off? After this institution had fairly started, the Washington insurance commissioner nearly put a crimp in its prospects by classing it as an insurance company and demanding the necessary $100,000 in securities before doing further business. Being unable to comply with this condition, the enterprising promoters resurrected the charter of another defunct, get-rich-quick organization of this state, the Security Casualty Company, which died some time ago. The promoters claim that the insurance department will permit this company to do business on condition of selling $50,000 worth of stock with a surplus of $10,000. Under the guise of this alleged protection they have started a campaign of persuading the easy doctors of the Northwest to part with some of their surplus coin by purchase of stock in one or both of these concerns. Our purpose is to caution prospective investors against the wiles of too plausible solicitors. Remember the fate of the Empire Life, of which this proposition is an imitation in modified form. The wise man will think twice before investing his money in such an enterprise without obtaining definite information aside from that presented by its promoters.

EVOLUTION IN THE PRACTICE OF MEDICINE.

During the last two decades there have evolved numerous changes in economic and industrial affairs of so revolutionary a character as to greatly alter the conditions of living and the relations of men to each other. These mutations have extended into all phases of human activities, and the practice of medicine has been as markedly and materially affected as any other. The circumstances of our forefathers, when the family physician attended to the physical, mental and moral aspects of his patients, have disappeared never to return. When many of the present generation of doctors began practice they had the satisfaction of attending families who continued to retain them as family physicians during a lifetime. At the present day these relations uncommonly exist, since most families for one illness consult one physician and for the next an entirely different one. This change has largely been brought about through the wide development of specialism and we often observe, what a former generation would have considered a remarkable situation, each member of the family having a different physician to attend his ailments. These conditions are universal and now well established.

Yet the most striking evolution in medical practice is the development of state medicine with its paternal care of the people. While this does not prevail extensively in this country, it is unquestionably coming. In Germany and England a large proportion of the people are now taken care of by the government, the doctor being hired on an annual salary, which is generally as small a sum as possible, to care for large groups of people during illness. Already the introduction of lodge and various forms of contract practice has become an established fact in all parts of this country. Once let state medicine become the custom of the land, and practice of medicine as we know it today will become largely a memory. These existing and prospective changes are not mentioned for the purpose of suggesting any remedies or means of averting them. It is purposed to call attention to the fact that in the evolution of medical practice these changes are inevitable. The established medical customs of European countries are fixed for the future and, since the United States sooner or later imitates the industrial and economic developments of Europe, those of a medical nature are coming to us. These radical changes may not occur during the lifetime of the older practitioners of today, but our successors may well anticipate conditions as revolutionary as herein indicated and will need to prepare themselves to meet them.

WHAT CONSTITUTES A LEGAL PRACTITIONER IN WASHINGTON.

The general assumption is that, when a physician has passed the examining board and obtained a license to practise, his legal standing in Washington is completed. In this, however, he is mistaken, since he is not legally qualified to practise until he has filed his diploma with the auditor of the county in which he resides. If he moves thence to another county the law requires that his diploma be again filed with that county auditor. Many seem to be ignorant of the fact or have forgotten that failure to comply with this requirement is subject to prosecution and a fine. How extensive is this negligence is shown by the fact that in the King County Medical Society alone there are sixty members whose licenses to practise have not been registered in the county auditor's office, and a similar condition doubtless exists in other counties. This failure does not apply alone to newcomers in the state since some of the negligent ones are found among the older practitioners. While probably no one has as yet encountered the law in consequence of this oversight, its possibility must be apparent to any one. The Board of Medical Examiners is very desirous that this requirement of the law be met by the physicians of the state and this appeal is made to all who have not yet complied with it to do so at once.

MEDICAL NOTES

OREGON.

Health Officer Resigns. Dr. G. S. Beardsley, of Eugene, has resigned from the position of health officer. This office pays the munificent salary of $25 a month, and the doctor found it impossible to perform the duties of that office and at the same time attend to his private practice.

Doctors Boycott Lodge Practice and Hospital Associations. The members of the Central Willamette Medical Association, including Lane, Linn and Benton counties, have unanimously agreed hereafter to have nothing to do with hospital associations, lodge practice and similar contracts. All physicians in the three counties having such contracts must resign from all such positions on the penalty of expulsion from the society.

Don't Spit on the Portland Sidewalks. Dr. Marcellus, Portland's Health Officer, has begun a crusade against the street spitters, and he proposes to arrest any one hereafter who publicly indulges in this offensive practice.

Dr. Smith Is Unable to Resign. Dr. Andrew C. Smith, of Portland, tried to resign from the State Board of Health, but the governor refused to let him out, as the attorney-general ruled that he must serve until his successor was appointed and the governor was too busy to secure a successor.

Measles Among the Indians. An epidemic of measles recently appeared at the Warm Springs reservation, in Eastern Oregon, getting such a foothold as to cause the death of several Indians. Dr. Calvin White, of the State Board of Health, dispatched a physician to take control of the situation.

Smallpox Epidemic at St. Johns. The residents of St. Johns were exercised last month over a smallpox epidemic, when nine cases were reported in one week. The schools were closed and fumigated.

Hospital at Junction City. A hospital was last month opened in this city, when it was publicly inspected by the people of that section of the state.

New Hospital at Pilot Rock. A two-story concrete hospital is nearly completed at this city. It will be known as Grace Hospital and will be of great service to that section, which is without hospital accommodations.

Dr. A. W. Swedenburg has located for practice at Ashland, coming there from Thief River Falls, Minn.

Dr. R. E. Dunlap has located for practice at Gold Beach, where a physician has been much needed.

WASHINGTON.

The January Meeting of the Washington Examining Board. The winter meeting of the board was held at Spokane last month. Forty three applications were received for the examination. Thirty-nine applicants appeared, one failing to receive a license. This is the smallest number that has appeared before the board for many years. There were three women, all of whom were successful, one being an osteopath. There was one from the University of Berlin and two from Canada. The applicants were notable for their youth, the prominent schools from which they graduated and the number who had served as hospital internes.

The following is the list of licentiates with their addresses: Baumbaugh, Bertha P., Puyallup; Castlen, C. R., Ft. Columbia; Clark, T. G., Everett; Condit, L. I., Wilbur; Craig, D. H., Port Angeles; Cullen, F. J., Tacoma; Foster, F. J., Seattle; Goodrich, W. W., Seattle; Grieff, C., Tacoma; Harvie, P. L., Everett; Hubert, Anna, Seattle; Hunt, J. H., Glendive, Mont.; Jones, H. D., Tacoma; Knudston, Albert, Seattle; Marshall, W. J., Palson; Munsell, Q. M., Grandview; Nelson, Ira, Spokane; Neuberger, J. F., Portland, Ore.; Newell, H. W., Seattle; O'Neil, K. J., Kent; Pennock, W. J., Spokane; Perritt, Mary E., Spokane; Peterson, J. R., Seattle; Roberts, N. E., Olympia; Rose, J. W., Mabton; Rosenthal, S. E., Portland; Thiel, H. F., Bremerton; Turpin, C. H., Mabton; Trowbridge, W. C., Seattle; Shiley, J. R., eSaitle; Shoot, H. E., Portland, Ore.; Smith, E. A. C., Tacoma; Smith, R. E., Seattle; Stauffer, L. J., Bonners Ferry, Ind.; Stusser, Samuel, Tacoma; Sweet, R. L., Bayne; Watson, W. H., Oakesdale; Winslow, G. H., Tacoma.

The Purposes of the Washington Examining Board. The board announces that during its term of office it purposes to give a thorough and fair examination to all applicants for license. It will pursue a relentless and unremitting effort to purge the state of quacks, irregular practitioners and abortionists. It solicits the co-operation and assistance of the medical profession of Washington to accomplish these results.

Annual Meeting of Pierce County Society. At the annual meeting of this society at Tacoma last month, it was decided to open a collection bureau for the benefit of the members of the society. W. N. Keller was elected president; E. W. Janes, first vice-president; Joseph F. Griggs, second vice-president; Royal A. Gove, treasurer; E. O. Sutton, secretary; B. H. Foreman, H. W. Dewey, P. B. Swearingen, board of censors; J. R. Brown, J. F. Griggs, B. K. Thyng, J. B. McNerthney, C. H. Kinnear, trustees; H. J. Whitaker, C. S. Wilson and E. W. Janes, contract committee.

Annual Dinner of King County Medical Society. The society held its annual dinner in Seattle, at the Arctic Club, Jan. 17, about 300 being in attendance. A very enjoyable evening was passed and much good-fellowship prevailed. President J. C. Moore acted as toastmaster. Those responding to toasts were Dr. Andrew C. Smith, of Portland; Judge R. A. Ballinger and Rev. W. A. Major, of Seattle; Judge Morris, of Olympia; Drs. H. E. Allen and J. H. Lyons, of the King County society.

Seattle Obstetrical and Gynecological Society. A regular meeting of this society was held at the University Club, Jan. 14, 1914. Abstracts of articles of interest to the society from the current medical literature were read and discussed. The topic of the evening, "Shall the Cervix Uteri be Repaired Immediately after Labor?" was discussed by each member present. Cases of interest were reported and discussed.

The Centralia Epidemic Nears Its End. The typhoid epidemic at Centralia has greatly diminished during the past month. The number of deaths has been about thirty. More than seven thousand people have been vaccinated for the disease. As no new cases have recently been reported, the epidemic is probably near its end.

Hospital Enlargement at Hoquiam. Plans are being made for the enlargement of the Hoquiam General Hospital at a cost of several thousand dollars. This will be a substantial addition and greatly increase the hospital's facilities.

New Hospital at Sumas. The remodeling of a residence in Sumas will be changed into the Dalton Hospital, which will soon be completed, with accommodations for about forty patients.

Army Surgeon for Seattle. Dr. I. C. Brown, a Spanish war veteran, has been appointed U. S. army surgeon of Seattle. He has previously served as surgeon at Fort Lawton.

New Superintendent at Sedro-Woolley. Dr. W. E. Case, superintendent of the Northern Hospital for the insane at Sedro-Woolley, resigned last month. His position will be filled by Dr. J. W. Doughty, who has served for some time as first assistant at the hospital at Steliacoom.

Health Officer for Lewis County. Dr. J. M. Schleicher, of Chehalis, has been appointed deputy health officer for Lewis County to assist Dr. E. L. Kniskern, of Centralia.

Dr. Alexander McCully has moved from Seattle to Everson, where he will engage in practice.

Dr. E. N. Roberts, who recently graduated from an Eastern college, has settled in Olympia to engage in practice.

Dr. H. A. Smith, who has recently practised in Chelan, has moved to Waterville, where he will permanently locate.

Dr. S. T. Faucett, of New York, has located for practice at Parkwater. The doctor has been serving for two years as surgeon at Panama.

Wedding of Doctors. Dr. John C. Bump, of Spokane, aged 75 years, has recently married Mrs. Laverne Crocker. In December, Dr. O. F. Lampson, of Seattle, married Miss Armenouhie Trashjian, of Cleveland, Ohio. Dr. A. L. Cook, of Anacortes, was last month married to Miss Marion Von Dersaar, of Indianapolis.

IDAHO.

Pocatello Medical Society. At the regular meeting of this society, held at Pocatello, January 21, the following officers were elected for 1914: President, E. N. Roberts; vice-president, A. M. Newton; secretary-treasurer, Joseph Clothier.

OBITUARIES.

Dr. J. R. Sinks died at Spokane, Wash., Jan. 5, from septic pneumonia, resulting from an ulcerated tooth, after an illness of five days. He was born in Kokomo, Ind., in 1883. After studying in the public schools he moved to Denver, Colo., and later graduated from Barnes Medical College, of St. Louis, Mo., graduating in 1907. He located for practice that year in Spokane, where he made a large number of friends.

Dr. G. B. Campbell died at Port Orchard, Wash., Jan. 6. Being called out early in the morning, he had difficulty with his automobile, which he was obliged to leave by the road. Walking to the home of a neighbor, he expired on entering the house from disease of the heart. He was born in Cairo, Mo., in 1862. He practised in Bremerton and Port Orchard for eight years. From 1908 to 1912 he was coroner of Kitsap County.

Dr. C. E. Robson, of Tenino, Wash., was shot and killed Jan. 13, on the streets of the city, by a former patient who became insane and entertained delusions against the doctor whom he killed.

REPORTS OF SOCIETY MEETINGS

OREGON.

PORTLAND CITY AND COUNTY MEDICAL SOCIETY.
Prest., A. W. Moore, M. D.; Secty., G. S. Whiteside, M. D.

Meeting of the Portland City and County Medical Society has held at Portland, Ore., Jan. 7, 1914, at 8:30 P. M., President A. W. Moore in the chair.

Members present: Drs. Rosenfeld, Selling, Baar, Pease, Kistner, L. Nelson, Williamson, White, A. W. Smith, Sternberg, Bettmen, Tucker, O'Day, K. A. J. Mackenzie, R. Hall, Sifton, Flagg, Brown, Myers, Holden, Tilzer, R. Walker, Sears, Coffin, Dammasch, Sabin, Booth, Kiehle, P. Rockey, Rybke, Gellert, O. B. Wright, French, Howard, A. C. Smith, Buck, Dillahunt, Baird, Payne, Marcellus, Swennson, Barbee, R. McDonald, R. Matson, A. E. Rockey, Slocum, McLean and Whiteside.

Minutes of preceding meeting read and accepted.

CLINICAL CASE.

Exophthalmus and Polyuria. Dr. L. Selling shows a patient six years old with this condition. X-ray plates by

Dr. Walker shows a probable osteosorcoma of the sphenoidal sinus.

Dr. A. W. Smith passes fly pamphlets.

PAPERS.

The X-ray Specialist in His Relation to the General Profession. By Dr. Tucker. Dr. Walker opened the discussion. Drs. O'Day, Tilzer, A. C. Smith, Sifton, Pettit, Williamson, Baar, Meyers, K. A. J. Mackenzie, A.E. Rockey and Whiteside also discussed the subject. Dr. Tucker closed the discussion.

Medical Defense. By Dr. A. W. Smith. Dr. A. E. Rockey opened the discussion and also closed.

Drs. Edmund Myers and Carlo Visette were elected to membership. Proposed for membership: Drs. William A. Shea, T. Homer Coffin, E. H. East, Mary R. Cliff, M. Bisaillon.

WASHINGTON.

CHEHALIS COUNTY MEDICAL SOCIETY.

Prest., E. R. Ahlman, M. D.; Secty., L. L. Goodenow, M. D.

A meeting of the Chehalis County Medical Society was held at Hoquiam, Jan. 3. Officers for the coming year were elected as follows: L. L. Goodenow, of Aberdeen, president; J. B. Kinne, of Aberdeen, vice-president; G. I. Hurley, of Hoquiam, secretary-treasurer.

Drs. C. H. Thompson, of Seattle, and C. J. Lynch, of North Yakima, were present and presented a plan for the physicians' state insurance act. The matter of the society's collecting bureau was also taken up. Physicians of the society appreciated very much the visit of Drs. Thompson and Lynch.

KING COUNTY MEDICAL SOCIETY.

Prest., J. C. Moore, M. D.; Secty., H. D. Brown, M. D.

The regular meeting of the King County Medical Society was held in the Chamber of Commerce, Jan. 5, 1914. Meeting was called to order by the president, Dr. J. C. Moore, at 8 P. M., 71 members being present. Minutes of previous meeting read and approved. The applications of T. B Sayre and F. W. Phelps were read. Gustave Lewis and W. O. Bell were elected to membership.

The retiring president, Dr. J. C. Moore, read his annual address in which he reviewed the work of the past year and thanked the members of the various committees for their co-operation and support.

Election of officers for the ensuing year followed, resulting in the election of D. H. Palmer, president; F. T. Maxson, vice-president; G. W. Swift, secretary-treasurer. W. C. Woodward, G. N. McLaughlin and A. O. Loe were elected members of the Board of Trustees. H. E. Allen, P. V. von Puhl, Richard O'Shea, A. E. Burns and H. E. Coe were elected to the House of Delegates.

The retiring president and secretary-treasurer were given a vote of thanks for their services during the past year.

The second regular semi-monthly meeting of the society was held Jan. 19, 1914. Meeting was called to order by the president, D. H. Palmer, 71 members being present. Minutes of the previous meeting were read and approved.

T. B. Sayre and F. W. Phelps were elected to membership. The applications of E. E. Beckett and L. H. Maxson were presented.

PATHOLOGIC SPECIMEN.

Large Appendix. By F. L. Horsfall. The specimen was an appendix whose end was the size of the small intestine. It had ruptured and free pus was in abdomen.

PAPERS.

Prevalence of Goitre in the Northwest. By Dr. D. C. Hall. Based upon examination of 3,500 students entering the University of Washington. A tabulated list of the students from the various counties of the state showed the percentage of cases of the types of goitre found. He reviewed the geologic formations of these localities and showed by charts that goitre is more prevalent on the slopes of the mountain ranges. He showed there is connection between the drinking of water from mountain streams and the prevalence of goitre. He compared his findings with those of other investigators. His conclusion was that the organic matter in the mountain stream water is the cause of goitre.

This paper was discussed by Drs. Winslow, Hagyard, Moore, Jones, Horsfall and Hoopman.

Coxa vera. Dr. John Ridlon, of Chicago, was introduced and spoke on this subject, taking up the etiology, diagnosis both clinical and by means of the x-ray, differential diagnosis and treatment.

In the discussion, Dr. Perry questioned Dr. Ridlon concerning intracapsular fractures of the head of the femur and subsequent bony union.

Transfusion of Blood. By W. C. Speidel. He gave history, indications, technic, conclusions.

Where all other means, using arsenic, 606, iron, red bone marrow, glycerin, etc., have failed, with the idea of tiding the patient over a relapse it is a beneficial and justifiable operation

The paper was discussed by Drs. Manning, H. J. Davidson and Dudley.

It was voted that the committee on public health and legislation be instructed to confer with the Board of Health in regard to taking measures looking toward the prevention of goitre.

STEVENS COUNTY MEDICAL SOCIETY.

Prest., W. A. Olds, M. D.; Secty., I. S. Clark, M. D.

At a meeting of the Stevens County Medical Society at Colville, Wash., Jan. 7, 1914, the following officers were elected for the ensuing year: President, W. A. Olds, Addy; vice-president, H. A. Greenwald, Kettle Falls; secretary-treasurer, I. S. Clark, Colville; board of censors, W. Mighell, Colville; W. A. Cartwright, Valley; D. H. Lewis, Springdale.

Papers were read by Dr. Cartwright on Tuberculosis of the Hip, and by Dr. Clark on Some Notes of a Recent Trip to Eastern Clinics. The next meeting of the society will be held at Chewelah.

WHATCOM COUNTY MEDICAL SOCIETY.

Prest., S. J. Torney, M. D.; Secty., W. W. Ballaine, M. D.

The regular meeting of Whatcom County Medical Society was held in the Chamber of Commerce, Bellingham, Wash., Jan. 12, 1914. Dr. L. R. Markley, on retiring as president, delivered a very interesting paper. He spoke of the success that had been made in medicine and surgery in the United States, the success of our local physicians and the advance of this society during his term of office.

Dr. W. W. Ballaine had a paper on Infantile Paralysis. This was along the lines of recent investigations and covered the investigation of this disease by the State Board of Health. Dr. Orville E. Beebe opened the discussion.

The society was favored and greatly appreciated the accidental visit of Dr. B. J. Lloyd, of the United States Public Health department. He delivered a very interesting and instructive talk on Bubonic Plague, which was enjoyed very much.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Prest., R. W. Perry, M. D.; Secty., E. B. Burwell, M. D.

The annual meeting of the academy was held at the Hotel Savoy, Seattle, at a dinner, the members being guests of the retiring president, Dr. J. A. M. Hemmeon.

Minutes of the previous meeting were read and approved Proposed for membership, Dr. J. A. Mahon.

A motion carried to provide members with a certificate of membership similar to that provided by the A. M. A. Annual reports of the chairmen of committees and the secretary-treasurer.

The retiring president, Dr. Hemmeon, thanked the members for their unfailing support and particularly Secretary Seelye for his excellent work. He complimented the academy upon the work of the committees during the year and the interest shown by the increasing attendance and number of clinical cases shown by the members.

He stated that one of the most important things accomplished was the revision of the Constitution and By-Laws and the writing of a short ethical code to be supplementary to that of the A. M. A. Subscription to the regulations which would hereafter be required of all members will accomplish two things. First, it will indicate our relation to each other in carrying on our work, and to the public. Second, it will serve as a guide to the members, especially the newer ones, when confronted by a difficult situation. Members must view the work of the committee in the broadest possible light. After all, our sincere effort should be to make the work of each lighter and more enjoyable, so that, free from the incubus of personal differences (and we are to be congratulated that the academy is enjoying such freedom), each member may do more efficient and satisfactory work.

If some of the older members have in the past used methods for bringing their names before the public which are now prohibited by the new regulations, let us remember that in earlier days a medical fraternity was not well organized; even our whole social fabric lacked organization so that some forms of advertising, now abandoned by all of us, were then used by many. Remember, too, that some have never used these proscribed means; and, finally, that the older and national societies are even more strict in such matters. We should endeavor to enter these larger societies; we can only do so by avoiding now what we must abandon later.

Officers for 1914 were elected as follows: President, Dr. R. W. Perry, Seattle; first vice-president, Dr. L. Klemptner, Seattle; second vice-president, Dr. J. Jones, Tacoma; secretary-treasurer, Dr. E. B. Burwell, Seattle.

Rising votes of thanks were tendered Drs. Hemmeon and Seelye for their meritorious work during the year. Following the election brief addresses were made by Drs. DeBeck, the first president of the academy; Greenstreet, Lensman and Stillson.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Materia Medica, Pharmacology, Therapeutics and Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph.G., M. D., Associate in Pharmacology and Therapeutics at Columbia University. Octavo of 602 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1913. Cloth, $3.50 net.

In Bastedo's book we have a notable contribution to pharmacology. Of the three subjects included in the title the author restricts his materia medica to the barest essentials, which is after all the sensible treatment for the medical student. He gives the fullest scope, however, to pharmacology, utilizing the recent results of researches in physiology, chemistry, bacteriology, and pharmacy to illumine his subject. We have, indeed, in the present volume a presentation of a neopharmacology that makes many of the standard textbooks look Rip Van Winklian. The book is on the order of H. C. Wood's classic but the account of experiments is much more systematically and succinctly arranged. No recent work reflects so fully and clearly the trend of modern investigation. To show the completeness of the author's study of the physiological actions of drugs, there are for example, under alcohol, 36 pages devoted to its action including 5½ pages on its food-value and 5 pages on its effect on the stomach. The reflex, stimulating influence of alcohol the writer finds dependent on its irritant action in the mouth alone.

Bastedo's method of discussing drugs is to give a chronologic account of classical experiments bearing on the class of drugs, or on a special drug, and then summarize the results. First he considers the class in general, as cathartics, and then goes on to describe the action of individual cathartics on the separate parts of the anatomic system. The results of recent researches on the action of the drug on each part of the body are lucidly explained and then a concise numerical summary of deductions follows. The therapeutic sections are naturally much briefer than the pharmacologic, a page and a half being given to the uses of alcohol, but the therapeutics are given more as indications based on clear, logical deductions from the research results and as such are clean-cut and precise. This is as it should be. Therapeutics of the past have been largely empirical, or based on the post hoc ergo propter hoc reasoning of clinicians. Take it all in all, this book is a most admirable exposition of the best scientific investigations into a pharmacology which bases treatment upon known facts and limits it to these. Some of the most popular idols are shattered in the process, as in the case of strychnin as a stimulant. Where there is a marked discrepancy between clinical and experimental results this is frankly admitted and discused. The book heralds the dawn of "a new era of simple and practical therapeutics, an era in which knowledge will supplant credulity, on the one hand, and skepticism on the other, and in which fewer drugs will be used but better treatment given." The index is surprisingly full, 89 items being given, for instance, under digitalis, mostly bearing its action. Winslow.

Diet in Health and Disease. By Julius Friedenwald, M. D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore, and John Ruhrah, M. D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Fourth edition, thoroughly revised and enlarged. Octavo of 857 pages. Philadelphia and London. W. B. Saunders Company, 1913. Cloth, $4.00. Half Morocco, $5.50, net.

In this fourth edition of this excellent book, although various theories and methods are described, as a rule the authors lay down what they consider to be the correct course for "the practioner who wants to know how much food to give and what kind, and he wants to be told how to be able to prescribe a diet as simply as he would a drug." Almost all recent information on diet finds a place in this edition, which is the largest textbook of its kind. The book is too well known not to be familiar to most practioners, and it should justly occupy one of the first places in every physician's library.

Its greatest excellence, however, lies in the ample text and explanations with which each dietary is introduced, its scientific basis expounded and the clinical value discussed. The special dietitic methods evolved by some of the great clinicians of modern medicine are given, compared and analysed. Balfour, Ebstein, Boas, Bouchard, Einhorn, Oertel, Weir-Mitchell, Leube, Lehnhartz, such are a few of the great names whose methods stood the test of time and proved their usefulness. (We hope in the next edition the authors will add also the Karell treatment for anasarca.) To facilitate the finding of a proper diet the authors divide the subject into sections: Circulatory, respiratory, digestive, genito-urinary, nervous, skin, constitutional and intoxications. Finally, about a hundred pages are devoted to dietaries in public institutions, recipes, chemical composition of American food materials, etc. The book is admirably gotten up and printed, and may be warmly recommended to all practitioners and advanced students. LENSMAN.

History of Medicine, With Medical Chronology, Bibliographic Data, and Test Questions. By Fielding H. Garrison, A. B., M. D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C., Editor of the "Index Medicus," Octavo of 763 pages, many portraits. W. B. Saunders Company, Philadelphia and London. 1913. Cloth, $6.00, net. Half Morocco, $7.50, net.

A perusal of Garrison's History of Medicine leads to the conclusion that it is so filled with facts relating to medicine that Burton's Anatomy of Melancholy has not much the best of it, as regards annotations and references. From a comparison of the present volume with Boyle's Historical and Critical Dictionary, printed in 1735, and the Chronology of the World from the creation to the year 1768, by Blair, the reviewer finds that Garrison has covered the notable names and incidents of history relating to medicine, in a manner that shows great research. The only defect noted is that, owing to the condensation of such a multiplicity of facts and names of men who promoted medicine, the average student or physician will not give the language of the author the reverence and respect due, owing to his modesty which caused him to ward his ideas in simple language. The field of modern medicine is covered very completely. One misses some things but, as sufficient is written to form the basis of an encyclopedia, it will surely meet with a warm reception by those who wish such a work. It can truly be termed classic.

SWEENEY.

The Protein Split Products in Relation to Immunity and Disease. By Victor C. Vaughan, M. D., LL.D., Dean of the Department of Medicine and Surgery of the University of Michigan, Victor C. Vaughan, Jr., M. D., A. B., in charge of the Tuberculosis Work of the Detroit Board of Health and J. Walter Vaughan, M. D., A. B., junior attending Surgeon to Harper Hospital. 12mo, 476 pages, illustrated. Cloth, $3.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

According to the statement of the senior author, "the purpose of this work has been to solve scientific, rather than to discover practical applications." Knowing that practical applications are the crying need of the practitioner of medicine, one, nevertheless, feels that a persual of this work would be both pleasant and profitable. It would enable him more readily to reason from post hoc to propter hoc in all matters pertaining to bacterial invasion of the body. For example, we are told that bacteria are proteins and that all true proteins, whether animal, vegetable or bacterial, contain a poisonous group and that this poison in its gross effects is the same in all i. e., the same in egg albumen, for instance, as in the anthrax bacillus; that this poisonous group is the central body, "chemical nucleus," of the protein, is the same in all, and that proteins differ only because they have different secondary molecules attached to the central poison radicle; that their pathogenicity is dependent upon the facility with which these secondary molecules are stripped from the poison radicle, leaving the latter free to act injuriously. Bacterial infection, immunity, anaphylaxis, specific ferments of cancer cells, protein fever, all are considered, together with much more that is valuable. The work is well worth anyone's time for study. WEST.

International Clinics. Vol. IV. Twenty-third Series. 1913. Cloth, 312 pp. J. B. Lippincott Co., Philadelphia and London. $2.00.

Neurological subjects receive most attention by the monographs in this number. Thus we find articles on mechanical vibration, static electricity, new methods of treating neuritis, interpretation of dreams, neurotic discomfort, the psyche in diagnosis, and syphilis of the pons, medulla and upper spinal cord, and constitutional immorality. Adams writes an interesting paper on augmented blood pressure, in which he attempts to distinguish between the vascular and cardiac elements in systolic pressure. He affirms that after amyl nitrite is given the systolic pressure in the normal person will rise, or remain the same, while in those with weak hearts it will fall. This contravenes teachings on the drug. Also, he says that the pressure is 10 to 20 degrees higher in the standing than sitting normal individual and, when the pressure is not higher in the erect patient, but even lower than in the supine position, there is vasomotor insufficiency. Abrams then brings in his spinal tapping for lowering blood tension. This method is also advised in the article by Snow on mechanical vibration. The reviewer has always found Abrams spondylotherapy difficult of deglutition and, even perhaps unfairly, has styled it—in a review of Abram's book on the subject—as spondulixtherapy. Abrams has unquestionably an active and fertile brain but some of its emanations are not so readily assimilated by the inhibitory Anglo-Saxon organ. The quarterly as usual is filed with interesting if unallied subjects.

WINSLOW.

Case Histories in Pedriatrics. By John Lovett Morse, A. M., M. D., Association Professor of Pediatrics, Harvard Medical School; Associate Visiting Physician, Childrens Hospital, Boston. Second Edition, Cloth. 639 Pp. W. M. Leonard, Publisher, Boston, 1913.

This series of case histories in pediatrics is now in its second edition. There are 568 pages in Section II, covering cases from all the common and many of the rarer diseases of childhood. Section I contains 63 pages on normal development and physical examination of infants and children. This part is a new feature. The whole work is much better illustrated and better indexed than the first edition. The reviewer, having been a pupil as well as later on an intern on Dr. Morse's service, is thoroughly familiar with this style of teaching. It is designed for the purpose of presenting actual problems to be solved by the reader and is a good stimulant for clear thinking. It makes a fine substitute for clinical and is far more valuable than didactic lectures. It is a great pleasure to recommend this book to our readers.

MANNING.

Malaria, Etiology, Pathology, Diagnosis Prophylaxis and Treatment. By Graham E. Henson, M. D., Member A. M. A., Florida Medical Association, etc., with Introduction by Charles C. Bass, M. D., Prof. Experimental Medicine, Tulane University, 190 pp. 27 Illustrations. Price, $2.50. C. V. Mosby Co, St. Louis, 1913.

A perusal of this volume indicates that the author has dwelt particularly on what is new on this subject. The reading matter, which is commonly found in the older textbooks giving detailed history, description of cases, discussing older theories, etc., is conspicuous by its absence. While presenting all the features and dealing with all the knowledge we have of this disease, it is essentially a laboratory book. The differential diagnosis between the different malarial parasites is described in detail, as is also the technic for the cultivation of the plasmodia. A description of malaria-carrying mosquitoes is incorporated and the prophylaxis of the disease given at some length. The volume, while not extensive, is a very good summary of our present knowledge of malaria.

Lloyd.

Causes and Cures of Crime. By Thomas Speed Mosby, Member of the American Bar, etc. Illustrated, Cloth, 354 pages; Price $2. C. V. Mosby Co., St. Louis, 1913.

This is an illustrated and well written book from the pen of a lawyer and criminologist who has produced several books on similar subjects. He avers the suppression of crime to belong to physicians and economists rather than penal concerns and brutalizing methods; minifies it as a legal problem; declares "a man may be instructed yet not educated; and that no completely educated man ever becomes criminal; that education not only develops the intellect but quickens moral sensibilities." He assumes crime and drunkenness both to be due to diseased minds and that prison reform involves hospitals rather than penitentiaries, and the conservation of the man rather than his degradation when crime is first committed. A prisoner is better or worse, according to treatment. He advocates indeterminate sentences and parole, with substitution of psychological care and good environment in lieu of the archaic penitentiary system. The author is a shrewd observer and wise of deduction. The book is worthy of careful perusal.

Crutcher.

Dysenteries; Their Differentiation and Treatment. By Leonard Rogers, M. P., F. R. C. P., B. S., C. I. E., I. M. S., Physician to Cholera and Dysentery Ward, Medical College Hospital, Calcutta. Oxford University Press, American Branch, 35 West 32nd Street, New York. Price $3.75.

The author divides the essential dysenteries into two widely differing classes, those caused by amebae and those caused by bacilli, differentiating the entameba coli from the two known pathogenic amebae, E. histolytica and E. tetragena. There are well described and useful tables included. The pathologic anatomy of amebic dysentery is given in detail and the frequency of liver abscess discussed. The hydrobromide and hydrochloride of emetine are brought forward as specifics for this disease when used hypodermically or intravenously and the opinion is expressed that this treatment will effect a permanent cure in many cases. The subject of bacillary dysentery is treated ably but not so extensively as the amebic form. A serum developed from the particular strain (if possible) from which the patient is suffering is said to be very efficacious in acute bacillary dysentery. The author concludes the work with a short treatise on hill diarrhea and sprue. The volume is very well written.

Lloyd.

The Principles and Practice of Gynecology. For students and practitioners. By E. C. Dudley, A. M., M. D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Sixth Edition, thoroughly revised. Octavo 795 pages, with 439 illustrations, many of which are in colors, and 24 full-page plates. Cloth, $5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

This is the sixth edition of a standard work on gynecology, thoroughly revised and brought up to date. The author presents the subject from an etiologic point of view, grouping in one chapter inflammations; in another tumors; in another displacements, etc. By this arrangement the chapters of the book correspond to groups of cases as seen clinically, which adds materially to its convenience as a work of reference. The personal opinion of the author is given on all debated points. He is conservative and gives preference, for the most part, to those methods of procedure whose value has been proved by the test of time. The Wertheim operation is adequately described, but is condemned because of its excessively high primary mortality. The use of the electrocautery is advocated in malignant cases, ignihysterectomy being preferred to the extensive cutting operations. Operative technic throughout the book is described in detail and fully illustrated by numerous excellent plates. The various operative procedures devised by the author are set forth, but not to the exclusion of other methods. On the whole the book is a clear exposition of gynecology as practised today by a conservative, thoughtful man of large experience.

Cartnell.

General Surgery. Vol. II, Series 1913. Practical Medicine Series. By John B. Murphy, M. D., LL D., Prof. of Surgery, Northwestern University, etc. 632 pp. Price $2. Year Book Publishers, Chicago.

The present volume is a worthy successor of the series of previous years. Much space is devoted to the newer refinements of technic, particularly in the fields of bone surgery and in the surgery of the brain and spinal cord. The recently discovered effects of various drugs in stimulating tissue growth and wound repair are reviewed. Recent advances in vaccine and serum therapy, the surgical treatment of epilepsy, the surgery of the vertebral column, the recent extension of the field of jejunostomy, and the newer intrathoracic surgery, all are thoroughly discussed. For a work which is essentially a review it is very readable and the interest is further enhanced by numerous excellent illustrations taken from current literature.

Jones.

General Medicine. Practical Medicine Series Vol. VI. 1913. By Frank Billings, M. D., Medical Department Rush Medical College, and J. H. Salisbury, M. D., Professor of Medicine, Chicago Clinical School. Price, $1.50. Year Book Publishers, Chicago.

This little book contains a short abstract of the recent papers of many authors on the many subjects of general medicine, so arranged that the most advanced views on the different diseases are quoted under the heading of each. It is very instructive, and, as it does demand much mental work on the part of the reader, it offers interesting and instructive reading matter during the intervals of rest between the rush of the day's work.

Leede.

Diseases and Deformities of the Foot. By John J. Nutt, M. D. E. B. Treat & Co., Publishers. Price, prepaid, $2.75. New York.

This book deals with the foot: its anatomy, mechanics and the deformities and diseases to which it is subject. With some 300 pages to devote to this one subject, the author is able to describe these conditions in much more detail than is possible in any text-book on orthopedic surgery. The book is correspondingly complete and helpful.

Fassett.

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ORIGINAL CONTRIBUTIONS.

DIAGNOSIS AND INDICATIONS FOR TREATMENT OF SUPPURATIVE DISEASES OF THE NASAL ACCESSORY SINUSES.*

By ROBERT LEVY, M. D.,
DENVER, COL.

The subject of diseases of the accessory sinuses of the nose needs no apology for its presentation either before a general medical association or one composed entirely of specialists. This is true at the present time quite as much as it was some years ago when we understood less of these cavities and their pathology than we do today. It would be a matter of curious interest although of no special importance or practical value, to estimate the number of publications upon this subject that have appeared in medical literature during the past ten years. As an illustration of the keen interest that has been manifested in this work I have found in one year alone one hundred seventy-five articles.

As a further illustration of the importance of this subject it has been shown by Tilley that in the entire mass of population 6.8 per cent. suffer from some affection of the nasal accessory sinuses. This may be taken as a fair and conservative estimate. Furthermore, the importance of this subject may be viewed from many standpoints. First and probably foremost is the fact that, being the underlying cause of certain common and annoying though mild symptoms, it is treated lightly by the laity as well as by the general practitioner though involving possibilities of serious consequences, to say nothing of our inability to cure by simple measures these symptoms. Secondly, because of the extreme difficulties in the way of diagnosis its importance must appeal to all medical men. Thirdly, the great variety of opinion as to modes of treatment, involving much elaborate and scientific research on the part of specialists, offers additional reason for placing great emphasis upon these diseases. And still, while it is difficult to arrive at a specific and exact diagnosis of the special cavity or cavities involved, it is nevertheless very easy to determine the presence at least of a disease of these cavities.

It is largely because of these reasons that I bring this subject to the attention of this society. It is especially the purpose of this paper to offer a brief outline of diagnostic points, to which will be added a comparatively short reference to methods of treatment and indications for the same. The question of diagnosis should appeal strongly to the general practitioner, while that of treatment must be of exceptional interest to the specialist.

Many anatomic and embryologic facts underlie and are essential to a comprehensive understanding of this subject. It is not, however, with these conditions that I wish to interest you. Suffice it to say that much of our understanding of many of the symptoms depends upon our knowledge of the anatomy of the parts, the numerous anomalies found here and the relations which one cavity bears to another. It has been shown that embryologically the ethmoid cells are the origin of the other pneumatic spaces and that physiologically as well as anatomically they are all connected. A moment's thought, without the necessity of an extensive anatomic dissertation, must impress us with the fact that diseases of one cavity bear of necessity a close relation and often an etiologic one to diseases of the other cavities and so we find that, while one cavity may be solely affected, more than one or even all may be involved in the same process. This is especially true of infectious diseases, resulting in suppurative processes which are the affections most commonly found.

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*Read before the Nineteenth Annual Meeting of Utah State Medical Association, Salt Lake City, Utah, Sept. 23-24, 1913.

Moreover, by virtue of peculiar anatomic relations serious complications occur, threatening the destruction of important functions or even the life of the patient. For example, we find serious affections of the orbit, the optic nerve, the lachrymal apparatus, the venous sinuses as well as other intracranial structures.

The numerous affections of the accessory cavities may be variously classified. This paper deals only with those of a suppurative character, namely, such diseases as produce purulent discharge as a result of the invasion of infectious microorganisms. These may be considered as acute or chronic.

Acute suppurative inflammation of the nasal accessory cavities is of special importance because of the serious consequences that are liable to attend them. Besides purely acute affections it is necessary to bear in mind that acute exacerbations of already existing or chronic lesions are the ones most to be feared. These chronic lesions are often spoken of as latent, largely because their manifestations are so trivial as to escape the patient's notice.

A case in point is that of a young woman who, during an attack of acute cold with pronounced nasal symptoms, developed rather suddenly severe headache and high temperature. Cessation of the nasal discharge occurred, followed by unconsciousness and muttering delirium. It was only upon close questioning that the husband was reminded that some time previously the patient had suffered from a mild so-called catarrhal discharge. It rapidly developed that she was now suffering from a serious intracranial lesion, the most reasonable excuse for which was some intranasal disease. Careful examination of the nose increased this suspicion and it was decided that the only means of saving the patient's life was complete ethmoid exenteration. Nevertheless her death followed within a few days after operation and a postmortem examination revealed purulent meningitis which could be readily traced to an extensive ethmoiditis of streptococcic origin.

Another case resulting less seriously was that of a sister of charity who had had two severe attacks of "cold in the head" with free nasal discharge. About one year after the last attack she developed an acute pain in the head with dizziness, followed by difficult vision and inarticulate speech. A small quantity of pus could be detected deep in the nose, in the ethmosphenoid fissure. The sphenoid cavity was opened and a small quantity of pus evacuated, resulting in rapid improvement and final cure. Both of these cases illustrate the very serious consequences that may follow acute exacerbations of comparatively mild, chronic lesions.

The most important diagnostic symptoms of acute purulent affections of the accessory sinuses are pain, purulent nasal discharge, high temperature and general septic manifestations. To these may be added swelling of the face. This sign is only manifest when the frontal sinuses, the ethmoidal cells or the antrum of Highmore are involved. While the general symptoms associated with a purulent nasal discharge are common to any one or all of the sinuses, localized pain and swelling afford an index to the particular cavity affected. The pain of frontal sinusitis is frontal in character, especially elicited by pressure over the superior internal angle of the orbit. The swelling is definitely over the frontal sinus, pressing downwards and outwards upon the eyeball. In the case of the ethmoid cells the pain is referred to the root of the nose, while the swelling is central or lateral into the orbit. When the maxillary antrum is affected the pain is in the side of the face and radiates to the forehead. At times it is so severe in the latter region that one strongly suspects a complication in the frontal sinus. Swelling is pronounced over the superior maxillary bone and malar region. The orbit being in close relation to all of these cavities quickly responds to pressure from intrasinus swelling, and the eyeball becomes displaced forwards and outwards in the case of the frontal, outwards in the case of the ethmoid and upwards in the case of the antrum. In nearly all do we find more or less proptosis.

The symptoms of chronic suppurative disease of the accessory sinuses vary greatly in degree, as already indicated. They may be so mild as to attract but little attention. Catarrh, so-called, is believed by the laity to be a universal affection and, unless attended with great annoyance or with more than ordinary discomfort, passes as a necessary consequence of climatic conditions. Nasal discharge. either anterior or posterior, especially of a purulent character, should not be passed lightly but should call for careful examination of the sinuses. Particularly is this true if the anterior nasal discharge be unilateral.

Another common symptom is headache. Too frequently do we find localized headaches attributed to gastrointestinal or nervous origin and, while it is admitted that a large proportion of headaches may be attributed to general or ocular disturbances, it is well to bear in mind that in many instances the real cause is to be found in the nasal accessory cavities. There is nothing absolutely pathognomonic about a headache but, when it is localized over the frontal sinuses, unilateral or bilateral, or referred to the center of the head and particularly when it is periodic in its appearance, these cavities should be at once investigated. The headache of frontal sinus and ethmoid disease is most pronounced in the morning, disappearing gradually as the day advances. These cavities have an opportunity, because of the erect position assumed during the waking hours, of emptying themselves. On the other hand, it is easier for the sphenoidal sinuses and the antra to evacuate themselves while the patient is recumbent and, therefore, the pain is less pronounced, becoming more marked as the day advances and as the cavities become filled to overflowing.

Among the most distressing symptoms that are frequently attributed to other causes are certain mental phenomena. These range from slight irritability of disposition to pronounced mental distress, aberrations and even melancholia.

Eye symptoms are extremely suggestive when unaccounted for by errors of refraction. These may be mild or severe. There may be slight diminution in the field of vision or partial blindness from an optic neuritis; asthenopia, iritis, glaucoma have all been induced by sinus affections. A slight though persistent blepharitis or phlyctenular keratitis has been relieved only after successful treatment of the accessory cavities.

There is one very common condition that deserves special mention. The medical profession generally still fails to recognize that nasal polypi are no longer to be considered simply as tumors of the nose. Too much emphasis can not be placed upon these growths as dependent upon deep seated underlying cause. This is to be found in purulent affections of one or more of the accessory sinuses and, while they may be extirpated and repeatedly excised, recurrence is sure to follow unless the accessory sinuses receive the necessary attention. These growths are particularly mentioned here because of the frequency with which they are met and the ease of diagnosis, but no examination in these cases is complete until the accessory cavities are investigated and no method of treatment can be successful without the necessary surgical attention to these sinuses.

The diagnosis of suppurative diseases of the accessory sinuses is confirmed by special diagnostic methods. Upon examining the nose a large or small accumulation of pus will be found. This should be thoroughly removed and the mucous membrane painted with a solution of 1 per cent. cocain in a 1 to 4 thousand solution of adrenalin. After applying this solution careful cleansing should again be carried out. The effect of the cocain and the adrenalin is to so contract the mucous membrane that a very complete view of every portion of the nasal cavities may be obtained. By careful observation one may see the region from which the pus comes. There may be such a small quantity, however, that other methods must be adopted, such as placing the patient in various positions, thus permitting the pus to drain from whichever cavity is involved. Special emphasis is placed upon the examination of the middle meatus, into which the ostia of the frontal sinus, ethmoid cells and the antrum of Highmore open. Postnasal discharge is frequently indicative of disease of the posterior ethmoidal cells or the sphenoidal sinus. In order to explore very thoroughly the ethmoid region a long-bladed speculum, such as Killian's, should be used. This being placed between the middle turbinate and the lateral wall of the nose will often bring into view discharge which otherwise would have been overlooked.

A most excellent method of eliciting discharge is by means of suction. Various appliances for this procedure have been devised. In order to determine from which sinus the discharge comes one may with advantage plug the region of the ostium of each cavity successively, thus eliminating all but one cavity at a time. By means of the nasopharyngoscope, the one devised by Holmes, one may not infrequently detect pus coming from the sphenoidal sinus.

Transillumination of the accessory sinuses is applicable only to the frontal and the maxillary spaces. It is of doubtful value in the frontal but very much more to be relied upon in the maxillary antrum; even here it is only of value when the difference in the two sides is pronounced. Exploratory puncture of the antrum, frontal sinus and the sphenoidal sinus is easily carried out, entirely justifiable and of positive value in the diagnosis.

Of all the modern methods at our command none is of greater value than the x-ray. By this we not only determine the existence of disease in these cavities but also their size and position. In this way anatomic anomalies are detected, thus protecting one against dangerous errors as well as fortifying the surgeon before and during operation. The x-ray, however, is not entirely free from fallacies, the greatest care being necessary in the mechanical feature of the examination as well as in the interpretation of the findings.

The treatment may be classified under medicinal and surgical. Surgical may be further divided into conservative and radical, the radical being subdivided into intranasal and external.

In all instances the indications for treatment depend upon evacuation of the sinus contents, the establishment of free drainage and the removal of diseased structures. Medicinal treatment is indicated in acute cases unattended by serious complications. By hot irrigations and the local applications of cocain and adrenalin much may be accomplished towards relieving the swelling at the natural openings. When, however, serious symptoms arise, indicating involvement of adjacent structures, one must lose no time in establishing by surgical measures free drainage. Intranasal operation is more frequently indicated here than external procedures.

It is in chronic cases that we have the greatest difficulty in determining the method to be adopted and the indications for the same. Lermoyez has well said, "to have a chronic sinusitis is less grave than may be believed; to operate is more serious than is said." Wherever possible conservative measures should be adopted. A moderate discharge without pain and with no history of acute exacerbations should be treated by the most conservative procedures consistent with the establishment of free drainage. The simple removal of a middle turbinate, the partial exenteration of the ethmoid, the enlargement of the fronto-nasal duct, the puncture of the sphenoidal sinus or the partial removal of the naso-antral wall are conservative intranasal methods which often are sufficient to completely relieve headache, diminish to the minimum purulent discharge, correct difficult nasal breathing, relieve mental and constitutional symptoms and restore defective vision.

It is remarkable how rapidly eye symptoms disappear even when due to optic neuritis, after comparatively simple intranasal operations. This is so well known and established a fact that one is at a loss in many instances to explain the successful issue. The close relation between the nasal accessory sinuses, especially the ethmoid and sphenoid to the optic nerve, has been carefully studied. In numerous instances simply opening and draining an enlarged cavity, though no marked evidence of suppurative disease existed, has resulted in a complete cure of rapidly approaching blindness. The following case typifies this class:

R. F. V., male, aged 22, was first examined Jan. 30, 1911. He gave a history of severe headache for three weeks. The pain was frontal in character, beginning over the left eye. No history of discharge from the nose. Three days before pain was localized over the right eye and there was considerable aching behind the eyeball, increased by pressure. On the day previous to my examination the patient complained of the right eye being greatly blurred. This had come on suddenly. Examination by Dr. Coover showed vision 6/20. Two days later vision was reduced to light perception and there were five diopters of swelling of the nerve head. On taking the field of vision a large central scotoma was found.

Examination of the nose and accessory sinuses by the ordinary method revealed nothing but congested inferior turbinates. X-ray by Dr. Stover showed large, though clear sphenoidal sinuses. There was no evidence of fluid in any of the accessory cavities. Owing to the rapid onset and progress of the disturbance in vision, it was decided to open the sphenoid on the right side. This was done under general anesthesia, the anterior and posterior ethmoidal cells being drained at the same time. Twenty-four hours after the operation the swelling of the nerve head had reduced one diopter. At the end of six weeks swelling had subsided and the vision had returned to 6/6.

The case of a young girl 10 years of age gave similarly satisfactory results. In this case x-ray showed involvement of the ethmoid only. Intranasal examination revealed a moderate and apparently mild suppurative ethmoiditis, especially upon the left side. Under ether removal of the left middle turbinate and a portion of the right followed by currettage was carried out. Some improvement in vision followed but the condition again became aggravated.

A second operation was performed Feb. 24, 1911, six weeks later. At this time the ethmoid was thoroughly curretted upon both sides. At the operation no pus was found, only a small amount of granulation tissue, evidently the result of previous operation.

The vision in this case was as follows: Jan. 28, 1911. R E. 2/60; L. E. 1/60. Operations Jan. 12, Feb. 24. April 18, R. E. 6/10; L. E. 6/8. May 13, both eyes 6/6.

As Tilley has stated, "the mere fact of chronic suppuration being present in a patient whose general health is good, in whom there are no local symptoms of importance beyond a slight discharge of pus or mucopus from the nose, does not warrant the surgeon in advising radical operations until simpler measures have been tried. Ingals states that his intranasal operation will bring to a successful issue 95 per cent. of the chronic frontal sinus cases.

The big question to decide is when to perform the radical external operation, the best type of which is found in that known by the name of its author, Killian. Without doubt the indications for this operation are gradually narrowing to very limited margins.

Even Killian himself outlines indications as follows: First, failure of other operations; second, presence of fistula or abscess or indications of necrosis; third, symptoms of intracranial complications; fourth, chronic purulent frontal sinusitis with pain, fever and fetid discharge; fifth, persistent headache not relieved by intranasal treatment; sixth, foul discharge in spite of repeated irrigations; seventh, recurring groups of polypi; eighth, simple purulent discharge not relieved by intranasal treatment, when the patient desires permanent relief by radical operation.

These indications, representing the extremest views of the author of the operation, may be somewhat modified, especially as regards those cases of simple purulent discharge and those associated with recurring polypi. To them, however, may be added severe ocular complications and recurring attacks of acute exacerbations.

After all is said the choice of operation becomes a question of judgment based upon experience. Even then many errors are made which are detected only afterwards and which necessitate second or even third operations.

DISCUSSION.

W. D. Donoher, Salt Lake City: I don't think there is anything in general medicine and surgery so complicated and far-reaching in its signs and symptoms as this class of cases. I am surprised to know that the percentage of sinus trouble is so small. The fact that it can exist without symptoms is something nobody will deny. The point where medical treatment should end and surgical measures begin is the most difficult thing of all. I have seen cases subjected to radical measures that did not get on well, and other cases apparently worse seemed to do without any great amount of treatment. It is possible in most instances to relieve the pain by local treatment. I don't believe there are any two cases just exactly alike in symptoms or in anything else.

R. R. Hampton, Salt Lake City: Dr. Levy has laid down clearly the indications for operative treatment of various kinds. I am glad to see that he favors the conservative operation in most cases. I am convinced that intranasal sinus surgery is the most difficult of all surgery. In the last two weeks I have seen two cases with conjunctivitis on one side, proving to be sinus infection. Many of you have patients complaining that the throat is dry as a piece of paper, which is one indication of sphenoidal infection. The doctor mentioned phlyctenular keratitis, one of the most stubborn forms of eye infection we have to treat, because it is an infection not from the outside but from the inside, though we do not know always where to locate the trouble. Sometimes it is a manifestation of some tuberculous condition.

L. W. Snow, Salt Lake City: I wish to commend Dr. Levy's opinion in regard to the severity of the surgery. I have felt for some years that too many radical operations have been done on the accessory cavities. Dr. Beck, of Chicago, also states that he is doing fewer radical operations on the accessory cavities than some years ago; that by medical treatment and the less severe surgical operations he is getting better results. It pays us to be a little more patient and to treat these cases conservatively.

H. Van Cott, Salt Lake City: Prevention is becoming one of the established considerations and many infections in the accessory sinuses can be prevented if proper attention be given to the case before there is any infection present. All the sinuses draining from the different cavities are covered by the turbinated bodies in the nose and their intumescent condition in childhood is what plugs up the drainage of those outlets. This condition in nearly all cases is relieved by removal of the adenoid growth.

Fred Stauffer, Salt Lake City: I don't think there are any sinus diseases whose symptoms are confounded more frequently with other diseases than are those of the frontal sinus. The pain in the acute frontal sinus disease is usually most intense during the middle of the day and generally disappears toward evening and during the night the patient is usually free from pain. Pressure here will elicit pain over the frontal sinus. We may have this before the pus begins to discharge.

Dr. Levy, in closing: My figures with reference to the percentage of recurrences were taken from Tilly and you know what a very conservative man he is. The removal of adenoids and relieving turbinates, thus avoiding infection of the sinus, is well worth considering but, as a matter of fact, the infections in these sinuses frequently take place from other causes. The condition of the turbinates is more likely to be the result of sinus infection than the cause. One of the very common causes of an ordinary iritis is traced to accessory sinuses.

THE INTERRELATION BETWEEN SYSTEMIC DISEASES AND DISEASES OF THE EYE, EAR, NOSE AND THROAT.*

By Arthur P. Lensman, M. D.
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Before viewing the subject of this paper in the light of our present-day knowledge, permit me to pay a tribute to the specialists who worked in this field before and since the invention of the ophthalmoscope. Who could be indifferent to the glorious memories of those who demonstrated the interconnection between structural changes in the retina, the pupil and other organs of the special senses and general diseases? There are still obscure corners and many conditions which puzzle us. If unity be the watchword of this age, we specialists, general physicians and surgeons must take cognizance of the entire human being. Localization diagnosis, precious as that is, does not mean that the process is limited to the bounds of a single organ. (Minkowski.)

The function of every organ depends on processes taking place in other organs and the products of their activities, in turn, influence other organs. Therefore, functional or organic defects in any organ may affect other portions of the body. (Munro.)

Since we must not be satisfied with local diagnosis and treatment, but take into consideration a multitude of other factors to make a clinical diagnosis, I hope that the thoughts and ideas expressed in this paper may appeal to you. The changes which are taking place and the influences which cause the gynecologist to be displaced by the abdominal surgeon, the genitourinary specialist by the urologist, and the dermatologist by the physical agent, therapeutist or metabolist, prove what a powerful ferment is working in the medical profession for more power and efficiency in general diagnostic and therapeutic work, for a better understanding of the obscure questions of pathology and a general desire for team-work and cooperation between all the special and general workers. This is my plea tonight. I hope we are all interested in the new fields of study. True, the gains so far give merely a glimmering light, but it is a subject full of promise.

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Recent study and clinical observation have shown how fruitful this work is becoming and how necessary it is for all of us to be in a receptive mood. I will ask your indulgence while I direct your attention to the newer gains from biologic and pathologic studies. On account of the immensity of the subject, I will limit myself to the following points:

(1) The special senses as a factor in systemic diseases.

(2) The influences of general diathesis and diathetic diseases on diseases of the special organs.

(3) The question of sepsis and septic foci.

(4) A brief discussion of autointoxication and the relation it bears to diseases of the eye, ear, nose and throat.

THE SPECIAL SENSES AS A FACTOR IN SYSTEMIC DISEASES.

The newer school of physiologists, Pawloff, Sherington, Starling, Loeb, have glorified the special senses. The details can be found in the special articles and textbooks of the above mentioned authorities. I would particularly call your attention to the newer conception of biology. This biology teaches that action of the body and mind increases all physiologic processes; that every action of the body is a stimulation of what Crile calls ceptors, i. e., stations in our body for the control and discharge of energy; that these ceptors are three, viz.: noci-ceptors for the transmission of stimuli harmful to the mechanism of the body, bene-ceptors which carry stimuli of a beneficial character, and noci-bene-ceptors which partake of the nature of both and are called distance-ceptors. These distance-ceptors reside in the special senses and adapt man to his distant environment by means of communication through the unseen forces (light, sound, smell).

Sherington has eloquently defended the thesis that the greater part of the brain has been developed by means of stimuli received through the special senses, especially through the optic nerves. Moreover, there is proof that these distance-ceptors, i. e., the stations which receive stimuli through the special senses, control also the production and energization of the internal secretion organs, as of the thyroid, the adrenals, the hypophysis. The emotions, the overwork or abuse in our complex civilization of the special senses, in other words, the intense stimulation, are the cause of a number of obscure diseases. This overstimulation may fatigue and exhaust the special senses, disturb the equilibrium of all the functions of the organism, and the results are functional and organic disturbances, as manifested in indigestion, constipation, deficient nutrition, retarded combustion, intestinal stasis, cardiovascular, hepatic, nephritic and glandular degeneration.

The students of the special senses hold the key to an explanation of many of the functional and chronic diseases. How else can we account for the success with which they promoted great reforms, such as medical inspection of school children, examination of railroad employes, etc.? Their pleas have found a sound and rational justification in the mechanistic explanation of present-day biology, and the emphasis which we will put on this application of biology to the clinic means much for the race and the individual.

INFLUENCES OF GENERAL DIATHESIS AND DIATHETIC DISEASES.

I can trace but briefly the history of this interesting group of diseases. Galen looked upon certain diseases as manifestations of a ''disturbed equilibrium.'' Wünderlich and Rokitanski named them ''constitutional diseases.'' During the ascendency of Virchow's teaching of cellular pathology the study of diathesis was neglected. With the rise of bacteriology of Pasteur and Koch the profession was too busy to pay attention to it. There were, however, some investigators in France—Teissier, Bazin and Lancereaux—who worked out several important problems in connection with these so-called diseases of diathesis. In Germany some pediatricians classified malnutrition, luxury consumption, etc., as diseases of diathesis. Rosenbach, Fr. Kraus and F. Martius taught also the certainty that many diseases cannot be explained any other way but on the basis of a so-called diathesis.

What, then, is diathesis? The best authorities define it as an hereditary inferiority, a morbid individual temperament or predisposition to disease. Here belong arthritism, infantilism, eosinophilia, neuropathies, hemophilia, diathesis inflammatoria, diathesis exudativa, nutritional and metabolic disturbances, rachitis, spasmophilia and anaphylaxis.

In regard to the etiology of these diseases, possibly the hormones are diminished so that we have the herpetic, lymphatic, arthritic; eczemas, urticarias, adenoids, gastrointestinal crises, chillblains, headaches, acne, seborrhea and asthma, visceral crises, migrain, neuralgias, gallstone colic, kidney colic, rheumatism, gout and calcium diathesis. You can easily see that such a morbid temperament will lead, in the end, to degeneration of noble cells, giving rise to sclerosis and interstitial growth, and it can easily be seen how it will affect the special senses.

Do we not know of the eyelids in such sufferers to be afflicted with urticaria, eczema, chalazion, blepharitis, plepharospasm? Do we not have among them the phlyctenular ophthalmia, scrofulosis? The capsule may be affected by gout and rheumatism; we may have even ophthalmoplegia in such patients. The conjunctivitis of rheumatism and gout is well known. Have not specialists themselves written about keratitis, arcus senilis, glaucoma and iritis, in connection with diathetic diseases? Have we not known of choroiditis, hyalitis, sclerotitis, glaucoma, cataract and rhinitis, which can not be treated unless in connection wth the diseases mentioned above; and that by attention to the general condition we are able sometimes to give help and in some cases even cure, if we take into consideration, as we should and must, these diseases grouped under the name of diathesis?

THE QUESTION OF SEPSIS AND SEPTIC FOCI.

Here we are in a more familiar field, in which the special-sense student recognizes the great services rendered to him by the bacteriologist, pathologist and surgeons in general, if he bears in mind that there are certain anatomic areas in the body which might become cesspools, and that there is an interrelation between sepsis in different areas, which may have dire effects on remote organs in the special senses and vice versa. In this connection he will note the work of Daniel, of London, who has cleared up a number of cases of rheumatoid arthritis by draining foci of infection in the nose and the accessory sinuses. Or the fine example of an oculist who suspected of a patient suffering from choroiditis, that, since he had a sensitive appendix, the toxins from the infected focus had something to do with his choroid inflammation. Dr. Robert T. Morris of New York removed the appendix in that patient, when the inflammation in the choroid ceased.

Such cures show the interrelation between a focus of infection in one organ and its influences by the microbe or by its toxin in remote organs. We should bear in mind that the usual foci of microbic infection may be in the testicle and epididymis, in the large bowel, in the appendix or in the gallbladder. There may be microbic infection of the stomach, pyorrhea of the gums, or in the nasal fossae and the accessory sinuses. With the manner in which such infection may affect the eye, the ear, the nose or throat, you are all familiar. The gonococcus, the pneumococcus, the bacillus diphtheriae, the streptococcus, the tubercle bacillus, the spirocheta pallida, the colon bacillus; how they may affect the eye, how it may give rise to otitis media, how in nephritis and in typhoid fever due to infection we may have tinnitis and even deafness; how in conditions of bacteremia, pyemia, pneumonia, typhoid fever, scarlet fever we may have a concomitant grave condition as mastoiditis; how we may have rhinitis, chronic suppuration in the accessory sinuses, syphilis, tuberculosis, Vincent's angina, tonsilitis and laryngitis; these conditions are all familiar to you and, indeed, the help which you have been able to extend to the general practitioner has been not only of value, but life-saving as well.

AUTOINTOXICATION AND ITS RELATIONS.

This is a subject in which a number of you specialists have taken an interest for many years and your special literature contains quite a number of articles of great value covering this field with a number of interesting examples of what the study of alimentary toxemia may do and can do for our common enlightenment. From my training and experience I can assure you that I frankly agree with those who hold that tubercle, cancer, rheumatoid arthritis, arteriosclerosis, diseases of the heart, kidneys and all diseases whether nervous, mental or physical, bacteriologic or parasitic, are either directly or indirectly influenced by the putrefactive processes going on in the alimentary canal. There are now many cases on record where the intestinal lesions of the mucosa and constipation were entirely due to oral infection or infection of the accessory sinuses, so that I believe sepsis probably precedes alimentary toxemia. In other words, I blame infection for a great many of the chronic lesions found in the alimentary canal. Therefore, I always examine my patients to ascertain whether they suffer from gout or osteoarthritis or any gastrointestinal condition; whether they have pharyngitis, otitis, sinusitis, nasal deflection, bronchiectasis, puerperal sepsis, genitourinary infection. You can see that one has to have here either the knowledge or the aid of a gynecologist, a genitourinary specialist and x-ray man, and the aid in particular of the eye, ear, nose and throat men.

When you consider that even the normal gastrointestinal canal has to cope with the products of assimilation, of elimination and the intermediary products; when you consider that it has to deal with such substances as cadaverine, neurine, putrecine, butyric, formic and acetic acid, sulphuretted hydrogen, aromatic substances like indol, skatol, phenol, sixty varieties of bacteria, you can see what enormous resistance a normal bowel must have in order to resist the danger of overwhelming the organism by its own products of metabolism. Therefore, if there be any lesion in the gastrointestinal canal, we can well imagine the effect it will have upon distant organs and particularly upon the organs of special sense.

Do we not know of cases of retrobulbar neuritis (Kraus), where oxibutyric acid in the urine or conditions of acidosis were found? Are there not on record cases of paralysis of the ocular muscles, where the treatment was directed to the digestive organs and the patient was cured? Do we not know of corneal and scleral affections, even corneal ulcer or episcleritis, where improvement took place when gastrointestinal hygiene was instituted; or many cases of uveal tract disease with an acetone-like odor of breath, where a cure with calomel and diet took place? In such cases even antisyphilitic remedies may fail, but when intestinal irrigation and antisepsis are instituted improvement does take place.

Do we not know of cases of glaucoma, where constipation and oliguria are prominent symptoms or many chronic choroidal diseases where the dietetic regimen is helpful? Have we not known of cases of blepharitis, of recurring hordeolum, where the only symptom was an abundance of indicanuria, and when the proper treatment for this was instituted these conditions gradually disappeared? From what has been said, one can see that autointoxication is not all "moonshine," that there are many and grave conditions in the eye, ear, nose and throat, in which local treatment alone does not prove itself sufficient and where the newer methods of treating gastrointestinal diseases, and particularly rigid hygiene and a dietetic regimen, help us wonderfully.

May I say a few words in regard to therapeutics? The time is past when we can treat merely with topical remedies. We have now in our armamentarium varied resources, such as disintoxication of the organism and reeducation of the personality of the patient; where we give here and there hormone substances; where we may use remineralization methods, hydrotherapy, massage, vibration, electro-therapeutics, methods of exercise and rest; bacteriologic products, like vaccines; dietetic, like lacto-vegetarian, meat-free diets. With the older antiseptics, like calomel, guaiacol and salines, you are all familiar. They too have their place and their indications. I merely wish to indicate that our resources are at the present day many and varied.

DECORTICATION OF THE LUNG FOR OLD EMPYEMA.*

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One of the most distressing diseases with which the medical profession has to deal is the old case of empyema with a fistula which does not heal. In this discussion I shall consider only the neglected case with a fistula and not the acute type of empyema. Acute empyema requires an entirely different method of treatment from that given the chronic type of fistula. Empyema is per se a disease of the pleura and not of the lung, although the lung and pleura may be affected at the same time. It occurs more often as a complication following acute infection of the lung.

In studying the pathology of chronic empyema, one should consider the disease as an acute abscess occurring in the pleural cavity. Here, as in other parts of the body, nature endeavors to prevent absorption by building up a limiting membrane or wall about the abscess. In the ordinary abscess, occurring in the soft tissues, this wall is composed of leucocytes, fibrin and coagulated lymph. In empyema the limiting membrane is the thickened pleura, upon which is deposited coagulated lymph which later organizes and makes a thick fibrous capsule covering both the visceral and parietal pleura. One is surprised in operating on these cases to discover that this membrane is often of extreme thickness, sometimes reaching nearly an inch.

In acute empyema the fluid may accumulate in a short time; the unyielding chest-wall prevents expansion outward and room is obtained by compression of the lung. If free drainage be established early in the disease, the lung reexpands quickly, thus obliterating the abscess-cavity and the patient goes on to rapid recovery. In the neglected case, in which the fluid remains in the pleural cavity for a considerable length of time, the lung is compressed so long and the pleura becomes so thick and fibrous that, even after free drainage is established, the lung cannot reexpand. In nearly all cases this is due to the adhesions and not to any disease of the lung. In such a case a large cavity remains in the thorax lined with this unyielding membrane which covers both the parietal and visceral pleura. The ribs prevent the wall of the chest from dropping in and the adhesions and the thickness of the pleura prevent the lung from reexpanding. The result is a large cavity which continues to discharge varying amounts of pus. Nature cannot obliterate this cavity, as she ordinarily obliterates abscess-cavities by collapsing the tissue about it, neither can she force granulations through the fibrous wall of the abscess.

Various methods have been devised by surgeons to obliterate this cavity. In the Simon-Kuster operation, as modified by Estlander, the ribs are resected subperiosteally over the entire cavity. The number of ribs resected varies with the size of the cavity. It is important to be radical and to resect one rib too many rather than one too few in order that no dead space remains in the upper or lower part of the cavity to continue suppuration. In some cases the pleura is so thick and unyielding that, even after this procedure, it is resistant enough to prevent the wall of the chest from collapsing.

Many surgeons have modified this operation, for example, Wagner, Sauboutti n, Beck, Quenu and Tietze, who resected small portions of the ribs through parallel and vertical incisions over the region of the cavity. Jaboulay and Leymaria divided the sternal attachment of the first to the seventh rib and Boiffin recommends resection of the ribs close to the vertebral column, making use, as it were, of the mobility of the costal cartilage. Recently I saw Wilms, of Heidelberg, resecting a couple of inches of several ribs along the spine and also along the sternum.

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Schede noted that some empyema cavities did not heal even after extensive rib resections. He also noted that the thickened pleurae did not unite with each other and directly impeded recovery. Consequently, he devised the operation which bears his name. The procedure consists of removing not only the ribs covering the empyema-cavity but also the thickened pleura and the intercostal muscles, so that the skin and superficial muscles rest directly against the thickened visceral pleura. This operation is usually performed through a "U"-shaped incision, beginning along the external margin of the pectoralis major muscle to the lower part of the thorax and then backward and upward to the median line of the scapula. The operation is severe and the shock to the patient is often alarming if not fatal, especially so since many of these patients are in an extremely weakened condition.

In 1893 Fowler, operating on a woman 35 years of age who had had an empyema with a fistula for 10 years, dissected out the scar-tissue surrounding the fistulous tract and removed the entire mass of fibrous tissue from the diaphragm and lung. He was surprised to discover that the lung began to reexpand as soon as this thick scar-tissue was pealed from it. The patient recovered from the operation and the wound healed entirely within a few weeks. This case was reported in December, 1893. In commenting on the case, Fowler stated that the history suggests a method of dealing with some of the instances of old empyema with persistent sinus which resist all the means usually employed for their cure.

De Lorme, after observing autopsy cases of old empyema, decided that the lung would reexpand if the thick membrane was removed from it. Consequently, he devised the same operation, i. e., of removing this enormously thickened membrane from the lung, and reported a case about three months later, in the early part of 1894. Unfortunately, his patient died from hemorrhage and shock.

This procedure, which is called "decortication of the lung," has not received the attention from American surgeons which it deserves. I have been able to find only 24 cases reported in the literature by three operators. The lung's capacity to reexpand, if given an opportunity, has not been fully appreciated and apparently this possibility was not considered by surgeons until the reports of Fowler and De Lorme were issued.

Ransohoff, following the work of these two men and appreciating the difficulty of removing this thickened pleura in some cases, advised making multiple incisions at right angles to each other, about a quarter of an inch apart, through this thickened pleura down to the lung, so that the entire visceral pleura is gridironed. This is a valuable procedure and can often be used with good results in conjunction with the decortication process. As an evidence of the lack of appreciation of the opportunity for the lung to expand, Keen states that, as a rule, satisfactory results cannot be expected by this method if the operation be undertaken after four or five months have elapsed since making the primary drainage.

Von Bergmann tells us to remove the costal pleura when it is tuberculous or calcified or interferes with the recovery of the patient on account of its thickness and density, and also to try decortication of the lung when other methods fail. If it be possible for the lung to reexpend in a reasonable proportion of these cases, without more danger to the patient than by other methods, we accomplish everything that is accomplished by the other methods, and, in addition, restore to the individual a lung or portion of a lung which would otherwise be useless. This factor certainly seems important enough to be considered seriously. From the experience with this method in the Mayo Clinic, our advice would be to try decortication and, when it fails, to try other methods.

Beck injected bismuth paste into sinuses in order to outline them for x-ray pictures and discovered that some of the sinuses healed after this injection. As a result, the paste, which is now made up of one-third bismuth subnitrate and two-thirds vaseline, heated until it becomes a liquid and injected as a liquid, will at times heal sinuses that resist other methods of treatment. This paste has also been used for persistent sinuses following an empyema of the chest. Undoubtedly some of the smaller cavities can be healed in this way. Ochsner has reported some very gratifying results by using the method. Our results have not been very satisfactory. If the cavity be of large size or the walls extremely dense, it is difficult to see how it can be obliterated by filling with this bismuth paste.

The writer knows of one case of empyema in which there was almost a total collapse of the lung which had been injected for two years by the discoverer of this method without improvement. Such a case is not, in our opinion, a suitable one for the method. As previously stated, the ability of a collapsed lung, even after many months, to expand when this thick membrane is removed from the pleura, is almost beyond comprehension. In the large cavities, if one has resected several ribs in order to get exposure of the entire cavity, an incision is made through the thickened pleura down to the lung. If the incision penetrates to the lung, a line of cleavage can often be obtained so that large areas, if not the entire pleura, may readily be peeled off. Particular care should be taken to free the area where the lung approximates the thoracic wall, in order to free the edges of the lung as much as possible. If the patient coughs or strains during this procedure, the lung in almost every instance bulges into the wound to such an extent that it must be pressed back out of the way in order to continue work. If the membrane be not readily stripped, portions of it may be cut away and, where it is extremely adherent, the Ranschoff method of slitting may be added to the decortication process. This method may also be used about the margins of the lung, in order to make them more movable.

In three instances we have removed this thickened pleura from an entire lung in an adult.

Case 1. A42485. Male, aged 40 years. Three months following a right-sided pneumonia an empyema was discovered and drained. This drainage continued for six months. When the patient was first seen he was very much emaciated and weakened, and had a persistent cough with a completely collapsed lung on the right side. In November, 1911, the thickened membrane covering the entire lung was removed. The patient suffered considerable shock but there was very little hemorrhage during the operation. The lung bulged freely into the wound and for the first two weeks seemed to fill the entire cavity. Then the patient began to run a temperature and after several days there was a large increase in the amount of drainage with relief of the symptoms. The drainage continued until March, 1912, when an exploratory operation was performed which showed that the lung had again collapsed and a partial Schede operation was performed to obliterate the pocket. The sinus is still discharging at the present time.

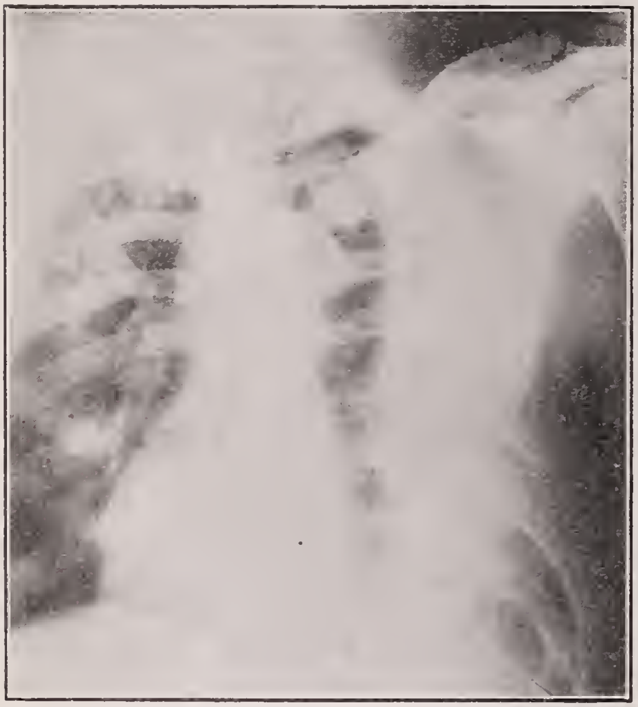

Fig. 1. Röntgenogram of thorax of case 2. Showing an almost entirely collapsed lung, which reexpanded after decortication.

This patient undoubtedly had a collection of fluid form in the pleural cavity two weeks after the decortication due to insufficient drainage. In our later cases we have placed gutta-percha tissue drains so that the entire cavity may be drained from a single dependent point and thus prevent the accident which I believe occurred in this case.

Case 2. A31028. Male, aged 20 years. Patient had had typhoid fever. He was sick for three months following the typhoid, when an empyema was discovered and drained. This was in January, 1908. The sinuses healed in May of the same year, but began to discharge again in March, 1909, and had been draining until November, 1911, when he came to the Mayo Clinic. Examination revealed a nearly collapsed lung on the right side with an enormous cavity which had been draining for 20 months. Through an opening large enough to explore the entire cavity the thick fibrous pleura over the entire lung was removed. There seemed to be a number of fibrous bands which entered the tissue of the lung and seemed to prevent it from expanding. At the time of the operation there were also a great many adhesions between the lower lobe of the lung and the diaphragm which could only be partially freed. (Fig. 1.)

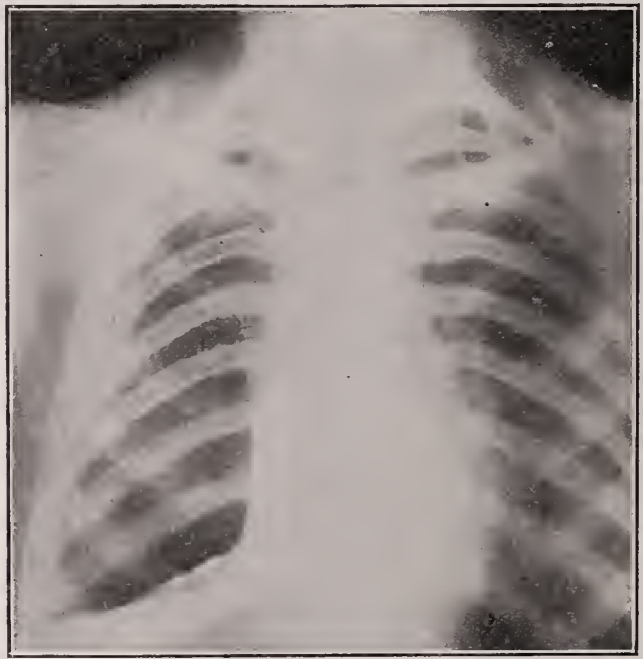

Fig. 2. Röntgenogram of thorax, case 3. Showing complete collapse of the left lung with heart pushed to the right.

This was considered a very unfavorable case after the operation was finished. To our surprise, however, the drainage stopped entirely on January 5, 1912, 51 days after the operation. There were good breath-sounds over the entire lung, the patient has gained 25 pounds in weight and has remained well to the present time.

Case 3. A77103. Male. aged 23 years. Was shot in the left chest from in front, October 5, 1912. The bullet passed entirely through the thorax and was found lodged under the skin of the back. Three weeks later an empyema was discovered and drained. He came under our observation December 7, 1912. The left thorax was much shrunken, the patient greatly emaciated and the entire left lung collapsed. He was advised to return to his physician in order to get in better physical health to undergo a decortication. On June 23, 1913, he returned for operation. This was six months after the drainage of the empyema. A complete decortication of the lung on the left side was made. There was very little bleeding and, although the patient seemed to be weak, there was almost no shock following the operation. Drainage ceased entirely in three months. There were good breath-sounds over the entire thorax and the patient has gained 19 pounds in weight.* (Fig. 2.)

In addition to these three cases of collapse of the entire lung, we have used the method on several other patients having empyema-cavities of considerable size. I shall report only two of them.

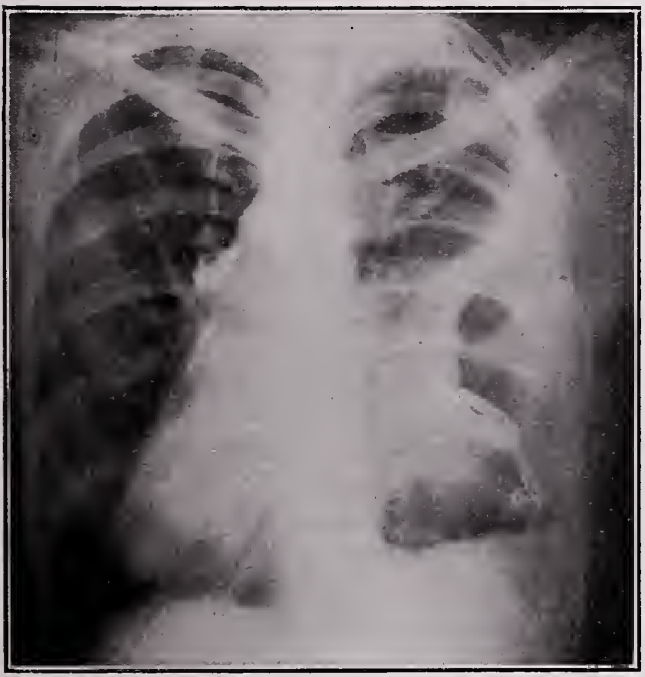

Fig. 3. Röntgenogram of thorax showing an old empyema with thickened pleura. Drainage tube extending into the cavity. Suitable case for decortication.

Case 4. A71074. Male, aged 22 years. Patient had a left-sided pneumonia complicated with an empyema which was drained in two weeks, and healed in five months. Two months later he began to cough and lose weight. The recurrence of the empyema and a large cavity were discovered at this time and drained. Seven months later the cavity, nearly 6 inches in diameter, posterior to the pericardium, was explored and the thick membrane covering the visceral pleura removed. The cavity healed entirely in 39 days.

Case 5. A73419. Male. aged 18 years. The patient had a left-sided pneumonia. Two weeks later an empyema was found and drained. The sinus drained for two years, then closed for about three weeks, when it again opened and drained for two months. At this time he appeared at the Mayo Clinic for examination. At operation a large cavity was found lying to the external side of the pericardium. A portion of the seventh rib was removed and the thick membrane peeled from the lung and pericardium. The cavity closed in three weeks. (Fig. 3.)

These five cases illustrate the possibilities of this operation. In addition, the patients have their normal lung capacity restored, which cannot be said of any other operation for this condition. In our experience the procedure is not as severe as a complete Schede operation, although it appears much more formidable. Hemorrhage from the denuded lung is not ordinarily severe. In several instances it was extremely slight and, while the lung was injured enough to allow air bubbles to escape in almost every case, no harm has arisen from such injury and apparently no infection in the lung has occurred.

I do not wish to be understood as saying that this operation is suitable for all cases of empyema with a large cavity, but with the patient in suitable physical condition I believe that it should be attempted before any other operative procedure for obliterating the cavity. It has not produced as much shock as the Schede operation and with reasonable care can be performed in many instances when the Schede operation was formerly indicated. But one death occurred in 11 cases in our clinic in which this procedure was used. This patient was physically below normal and had gone through a severe attack of typhoid fever and measles within the year. A large cavity existed which extended to the mediastinum with a connection into a large bronchus. I believe that in this case the operation was carried too far or that the patient received a shock from too much manipulation along the pneumogastric nerves.

BIBLIOGRAPHY

Beck: Jr. Am. Med. Assoc., Jan. 2, 1909, 14-18.
Fowler: Med. Rec., Dec. 30, 1893, 838-839.
Lund: Jr Am. Med. Assoc., 1911, lvii, 693-697.
Ochsner: Annals of Surg., 1909, 151-157.
Ransohon: Annals of Surg., xliii, 1906, 502-511.

DISCUSSION.

A. J. Hosmer, Salt Lake City: I would like to ask Dr. Beckman if he has had experience in cases of empyema without severe formation of scar tissue, with compression of the lung for some weeks, in putting the fingers through the resected ribs, allowing the patient to partially come out from the anesthetic and by use of the fingers breaking up adhesions and observing the lung expand. I have had five cases with empyema for perhaps two or three months, where this procedure has been effective. There is a good deal of hemorrhage but I have never seen harm come from that. I think the thick scarring of the lung might be prevented if this were done at the early operation of opening and draining the pus.

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*Since writing the article, Case 3 developed a temperature and cough. Exploration showed a small empyema pocket which required drainage. About three-fourths of the lung has remained functionating.

E. F. Root, Salt Lake City: The operation described is applicable to old cases where the pleura has become thickened almost like leather, and by so doing in some instances the lung will reexpand. There are, however, cases where the lung will not expand, such as old calcified pleurisies. There is sometimes a covering over the greater portion of the pleura of solid lime substance, making a wall that can only be removed by forcible means. One can peel off the calcified matter and do the Estlander operation of collapsing the chest wall. I had a case, 54 years old, primarily of pneumonia, that had gone on for about three years, draining all this time. I undertook a decortication of the entire pleural surface. There was at least a double handful of calcic matter, some pieces being as sharp as a sharp knife. The entire pleural cavity was peeled off, the ribs being cut along the spinal column and sternum and sub-periosteal resection done. The case died about the fifteenth day with symptoms of brain embolism. The case did not bleed exceedingly and it seemed a favorable one.

R. T. Richards, Salt Lake City: During the winter of 1904-5, in New York, at Bellevue Hospital, were over 900 pneumonia cases with nearly 100 of empyema. Whenever undue haste was shown in withdrawing the drainage practically always a second or third operation had to be performed, but wherever the drainage was free from the beginning there were no cases of secondary operation. The necessity for decortication of the lung arises from insufficient drainage or drainage not maintained long enough for the lung to expand.

A. A. Kerr, Salt Lake City: I believe Dr. Martin's method of spinal anesthesia in these cases would possibly tend to lessen shock. I had the case of an old man of about 79 years of age with pneumonia of the left lung who developed a severe empyema. I resected about two inches of two ribs and put in a Willm's tube under a spinal anesthetic. About six weeks' draining followed. After the suppurative process subsided I injected about a pint of modified Beck's paste, using one part of bismuth, two of vaseline and 1 per cent iodin. The patient made a satisfactory recovery and is enjoying good health at 82.

A. W. Morton, San Francisco: I wish to ask the doctor, in acute empyema, if he has had experience in injecting a small percentage, say 2 per cent., of formalin in glycerin, aspirating and getting good recoveries. I have used it in a number of cases in children, and then drawn off the pus two or three different times. It is remarkable how the cavity will become disinfected and clear up with practically no pus in it.

Dr. Beckman, in closing: Lloyd's method in operating upon acute and subacute cases of empyema is a very valuable procedure. There are sometimes adhesions or bands across the pocket, and unless these partitions are broken down at the time of the primary drainage your patient cannot recover. I am convinced that in every case of acute empyema we should establish free drainage and break down all adhesions at the time of the primary drainage, thus preventing many chronic cases. I have seen old cases with calcareous deposit lining the entire cavity. They are difficult to treat. We are not able to tell until we have freed the lung whether it will expand or not. According to our latest textbooks on surgery it is useless to try this procedure before four or five months. We have one case where we restored a lung after six months, in another case nearly two years after the drainage of the empyema. In the ordinary case decortication should be tried first. It must be combined in many cases with Estlander's or the Schede operation.

The Etiology of Acute Rheumatism. Three types of organisms have been isolated from the joints in rheumatism, each of which can be converted into the other quite readily.

Two types, one a very long chain producer, the other resembling a micrococcus, have been obtained from cases in which no muscle involvement was present. When injected into animals as isolated they commonly produce arthritis, endocarditis, and pericarditis, but not usually a visible myocarditis, and never a myostitis.

The third type, a diplococcus with short chains of diplococci was obtained from cases of rheumatism in which definite muscular involvement was present. It also produces arthritis, endocarditis, and pericarditis, but especially, marked myocarditis and myositis.

All three forms which have a low grade of virulence are quite freely susceptible to phagocytosis.

The results of the cultures in man and of the animal experiments support the view that acute articular rheumatism is due to streptococci which have peculiar properties.

Experimental and other evidence has been produced to indicate that the more or less closely related condition, muscular rheumatism or "rheumatic myositis," is due to streptococci, closely related to those in articular rheumatism.

The name *Str. rheumaticus* may be retained at present, not with the idea that the organisms so called always produce rheumatism, but rather to call attention to the fact that when streptococci produce the symptoms and lesions of rheumatism they have certain special features which streptococci from other sources do not usually have.

The affinity for joints, endocardium, pericardium, and often also myocardium and muscles which characterizes these organisms when first isolated, tends to disappear on cultivation. It may be restored by animal passage, and other strains of streptococci under certain conditions may be made to acquire the features of the strains from rheumatism. When the rheumatic strains have acquired the cultural features of hemolytic streptococci they lose the affinity for the endocardium and pericardium and acquire an even greater affinity for the joints. When they have been converted into pneumococci of a certain grade of virulence pulmonary hemorrhages and pneumonia are commonly found after intravenous injections whereas when the virulence is still greater death from pneumococcemia results. These and other facts suggest strongly the possibility that previous to an attack of rheumatism various types of the streptococcus group, especially hemolytic streptococci, acquire in the tissues of the infected individual the features which give them the simultaneous affinity for joints, endocardium, pericardium, and myocardium.—E. C. Rosenow, The Journal of Infectious Diseases, Jan., 1914.

A SUMMARY OF ELECTROTHERAPEUTICS.*

By Edmund Myers, M. D.,
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Late Assistant to the Electrotherapeutist, Boston City Hospital.

I was pleased not only at the honor of being invited to come before you but also because it is significant of the fact that the value of electrotherapeutics is now being realized by the general practitioner. Let me presume that the wall-plate is the most frequent and often the most abused piece of apparatus to be found in your offices. So I will first consider the currents to be derived from it, galvanic, faradic and sinusoidal. Undoubtedly the improper use of these currents has caused many physicians to look upon them with skepticism.

A wall-cabinet is best operated from a direct or continuous street current, because that always flows in one direction, whereas an alternating current, as the name indicates, flows first in one direction and then in the reverse, thus making the polar action of absolutely no therapeutic value regarding galvanism. If no street current or only an alternating one be available, there remains a choice of four methods of securing a direct current, a motor generator, a battery of wet or dry cells or an electrolytic rectifier.

To properly use a wall-plate a rheostat and a milliampere meter are absolute essentials, the former because it gradually raises the current to the desired amount without turning on a full current and so causing the patient a shock, the latter because it is most essential to know the quantity of the current. In addition to these a voltmeter is advisable because this measures the pressure of the current.

The properties of the positive or anodal pole and of the negative or cathodal are diametrically opposed. The positive pole is sedative, acid, causes coagulation, a vasoconstrictor and generates oxygen. The negative pole is stimulative, alkaline, causes liquifaction, a vasodilator and generates hydrogen. With these facts well in mind, one should have no difficulty in obtaining a desired result.

A very simple method of testing for the polarity is to wet a piece of blotting-paper with saturated solution of potassium iodid and apply the two cord tips to the moistened paper. The positive pole will make a brown mark on the paper.

A large pad electrode is preferable to a small one, unless one desires to concentrate the current to any small area. By placing the electrodes near each other a stronger current is available, as there is less resistance offered by the body than when the electrodes are far apart. If the electrodes be placed far apart the body resistance is overcome by use of the rheostat. See to it that the electrodes are well moistened.

Testing for the reaction of degeneration is essential in all nerve and muscle injuries, for it is only depending on this that one can determine the proper treatment to be given. After an injury atrophy sets in, but this may not be evident for ten days to two weeks. Response to faradism is first lost and then, if the condition be serious, the part will react only to interrupted galvanism and finally will not react at all. All cases of malingering may be promptly determined at the end of two weeks by simply testing for reaction of degeneration because, if the condition be not present, the application of faradism, especially over a bony prominence, will do no harm but cause pain enough to make the patient settle the diagnosis by uttering some exclamation.

The laws of reaction of degeneration when using interrupted galvanism may be briefly stated as follows: C. C. C. greater than A. C. C., which means that the turning on or closing of the current through the negative pole causes a greater amount of contraction when applied to the body surface than the same amount of current would cause were the positive pole used. A. O. C. greater than C. O. C., which means that, when the current is removed or open, a greater contraction occurs through use of the positive pole than the negative with the same amount of current. Any deviation of these results is indicative of the presence of the reaction of degeneration.

Should an injured part respond to faradism, then there is not a complete reaction of degeneration and the faradic current is the proper treatment. When response to faradism fails, then the interrupted galvanism is to be given. Frequent tests with faradism should be made and, as soon as the galvanism has repaired the structures to such an extent that a response to faradism may be obtained, the galvanism should be discontinued and faradism substituted. Faradism causes muscle stimulation but care should be used not to overstimulate. Give short treatments at first and gradually increase duration. Faradism must never be used in an inflammatory condition.

Other electro-diagnostic means should not be lost sight of. For instance, a patient complains of pain over the region of an ovary. Pass a small amount of negative galvanism into a vaginal electrode. This will cause pain. Now pass a rapidly interrupted secondary faradic current through the electrode. If the pain be relieved by faradism we have an oöphoritis; if not relieved, then resort to surgery should at once be had, as a pyosalpinx will be found. Diagnosis by means of an electric light, as in cystoscopy, requires no further mention to recall to you its value.

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*Read before the Twenty-fourth Annual Meeting of Washington State Medical Association, Everett, Wash., July 14-16, 1913.

"In a given case of paralysis we are often in doubt whether the lesion emanates from the brain or the motor cells of the spinal cord. In such a dilemma we employ the faradic current with an automatic rheotome. A large, indifferent electrode is placed on the sternum and a small electrode at the motor point of some muscle on the normal side; we now employ sufficient current to get a noticeable contraction. Leaving the indifferent electrode still on the sternum, we place the small electrode at the motor point of the corresponding muscle of the supposedly paralyzed limb and note if the contraction be normal, decreased, or increased; if increased, the lesion is in the brain or upper motor tract. We will also find exaggerated reflexes under these circumstances. If the contraction to the faradic current be decreased, the lesion is in the motor cells of the spinal cord or in some other part of the lower motor segment. This will explain a fact well known to neurologists that we often see exaggerated reflexes and great irritability of muscles in palsies of cerebral origin. We should remember that the nutrition of the muscles is directly interfered with only when the lesion is in the lower motor segment. If the lesion be in the upper motor segment, the nutrition of the muscle will not be affected, as in this case it will be maintained by the centers in the cord."

Cataphoresis is the transmission of medication from an electrode into the body. A good general rule is that acids should be applied with the negative pole, alkaloids and bases with the positive pole. Local anesthesia by cocain or novocain is easily induced by cataphoresis. With a current of two milliamperes applied for five minutes it has been shown that complete local anesthesia is produced lasting eighteen minutes, while with the same current for ten minutes the anesthesia lasted twenty-seven minutes.

A galvanocautery has an advantage over a pacquelin in that it is placed cold on the part, exactly where you wish it and then by turning a button you heat the instrument and get the desired effect. Heat is lost in the atmosphere in the transmission of a paquelin cautery from the alcohol lamp to tissue and in addition there is danger of cauterizing other tissues while placing the point in position. Always move cautery very slightly from spot cauterized, so that it does not stick to the cooked part when attempting to remove it. White heat cuts tissues and, therefore, should not be used. Should a portable battery be used for cauterizing, see to it that the cells are linked carbon to carbon and zinc to zinc, because it is increased current strength and not increased electro-motive-force that is desired.

Bearing in mind the statement that the negative pole causes liquefaction, you will find that the treatment of a urethral stricture by the negative galvanic current is far preferable, as regards the patient, than is a surgical operation. A sterilized, olive-pointed electrode connected to the negative pole is inserted into the urethra and allowed to rest against or enter, as the case may be, the stricture. A large pad is connected with the positive pole and placed upon the abdomen. A current of three to five milliamperes is first used. Later this may be increased even to 20 milliamperes. The first treatment should not exceed five minutes and later may be increased, but a maximum limit of ten minutes is a good rule to follow. Daily treatments may in some cases be given until the stricture has been passed and then give not over two galvanic treatments a week. As soon as the calibre of the stricture will permit, a high frequency vacuum tube may be passed and treatments given every day in addition to the specified galvanic treatments. The size of electrode tips should be increased two on French scale every week after passing the stricture. No pressure should be exerted, as the cicatricial tissue is slowly but certainly most effectually softened and destroyed.

I have successfully treated strictures impassable except with a filiform bougie by the above method. It is impossible to employ this method with an irritable, granular or discharging stricture which will bleed when touched. These should first be treated with a healing injection or suppository. Electrically they should be treated with an insulated, copper-tipped sound, using the positive pole and a small amount of current. This results in a deposition of a salt of copper in the tissues which is both healing and antiseptic. When the irritability is overcome the case may then be treated as I have detailed above.

Now let us turn to a reverse condition. Recalling that the positive pole is acid, and because of its acidity will coagulate the albumin of the blood and harden tissue, this pole must be used in the wiring of an aneurysm. An aneurysm of the sacculated variety only is amenable to treatment. A hollow needle connected to the positive pole is introduced into the sac and through this is slowly passed aseptic fine gold wire. The negative pole may be conveniently placed against the patient's back. The operation is performed without anesthetic. Five milliamperes of current are turned on and are increased one milliampere per minute until a maximum of fifty milliamperes is reached. This amount of current is maintained for ten minutes and then is gradually decreased. The operation is justified, not only because of prompt relief from pain which ensues but also because it is the only method which will prolong life. One case has been reported where life was prolonged five years. I have heard a patient while on operating table volunteer the information that his pain was decreasing and have seen the expansile movements grow less and the sac became firmer to the touch.

The faradic current is more mechanical than medicinal in its action and is used as a general tonic and stimulant and also assists in the elimination of waste products. General faradization is best given by means of the faradic bath. The primary current has a low, while the secondary current has a high electro-motive-force. The primary coil causes muscular contractions, whereas the secondary coil quiets pain.

Duchenne states the following:

(1) The primary current affects organs more or less deeply situated under the skin; it also affects them more intensely.

(2) If moist electrodes are employed on the skin, the secondary current penetrates more deeply than does the primary.

(3) The secondary current affects the sensibility of the skin more intensely.

(4) The secondary current produces more marked reflex contractions.

A sinusoidal current is one which flows first in one direction and then in the other in the form of a sine curve. It will produce powerful muscular contractions, thus causing valuable stimulating and tonic effects upon unused or partially atrophied musculature. It will produce contractions in many cases in which the faradic current fails to produce any visible effect. The contractions are absolutely painless. By contracting the blood vessels of the splanchnic circulation, improvement in the general blood circulation is obtained. The sinusoidal bath is the best method of giving a powerful electrical treatment.

Static or frictional electricity is of exceptionally high voltage but of very low amperage. Its effects are due to oscillation conveyed to the nerves. Its effects as a tonic upon general body metabolism are due to its passage through the tissues with each alternating charge and discharge. Static breeze is a pleasant sensation and sedative in its action, at the same time acting as a tonic to the nervous system. It has well been called an equalizer of nerve force. The static or Morton wave is quite similar in its action to faradism, but is more powerful. Static sparks are penetrating and stimulating. The spark produces a sort of local gymnastics, bringing to its point of application a return to normal conditions, whether the cause be muscular spasm, indurated tissue, hypertrophy or inflammation.

The term neurasthenia, like charity, covers a multitude of sins, viz., wrong diagnoses. Electrotherapy in conjunction with a proper regulation of diet and personal habits will accomplish wonders. I have yet to see a true neurasthenia that was not of sexual origin. A patient will often complain of run-down nerves. A stimulation of the spinal cord by static sparks, following a stimulating vibration of the spinal nerves together with an application of the static head breeze, will produce a cure. Should the blood-pressure be high, substitute antocondensation for the head breeze.

Vibration improves muscular metabolism by increasing the volume of blood to point of application. Vibrating for fifteen to thirty seconds over a nerve center will stimulate; continuation after that will produce inhibition. It is hard to draw a dividing line between the two, as the type of machine and the amount of pressure used must be considered in each individual case. Vibration of nerve centers corresponding to part of body treated should also be done.

Incandescent electric light, whether used as a strong candle power lamp under a reflector or in the form of a cabinet, causes a production of heat in and a stimulation of the tissues. Incandescent light contains but a few violet rays.

The electric arc lamp possesses actinic or chemical, thermic and luminous rays. The ultra-violet end of the spectrum is bactericidal, the central portion tonic and sedative, the infra-red end thermal and stimulative. This lamp not only produces heat but transmits light into the deeper structures which there becomes changed into heat. "Light has a special action on the vasodilators of the arteries, stimulating increased activity and permitting the blood to flow more rapidly to the surface. This takes off the burden of the heart's action and relieves the constriction to the arterial circulation. Oxidation is increased with an increase of elimination. There is a fall in arterial tension and a uniformity in the action of the heart and respiration."

Locally applied, high frequency causes an increased supply of blood to the part and this increase of activity is the cause of relief of the symptoms in inflammatory and hypertrophied conditions. Electricity is germicidal and this will account for the successful treatment of pustular acne with a high frequency spark. The spark may be used with gratifying success in the removal of moles and warts. Inoperable carcinoma, when superficially situated, should be subjected to this form of treatment as the growth is retarded, the stench removed and the pain relieved.

For treatment of any of the body cavities a non-insulated vacuum electrode is absolutely of no therapeutic value. This is easily demonstrated by passing the current into a non-insulated vacuum tube and surrounding the circumference of the proximal end of the tube with your hand. It will be seen that the amount of current passing to the distal end is practically negligible. I always make it a rule never to keep an insulated tube in contact with mucous membrane over seven minutes at any one treatment and consequently I have never caused any burn to a mucous surface.

The number of articles which have recently appeared on the d'Arsonval current is indicative of the value of this agent and it is certain that its use would not be advocated by men of high professional standing as internists, if they could accomplish with drugs what they can do with autocondensation. This current produces the following results: (1) Arterial tension is reduced. (2) The heart beats more easily. (3) Respirations are deepened and quickened. (4) All metabolic processes are increased.

This last statement means a great deal and mention of them will not be superfluous. Leucocytes and phagocytes increase in number. Output of urinary solids is increased. All glandular activities and elimination through the skin are increased. The current, in its passage through the body, stimulates each individual cell, not only the normal ones but also those which are deficient in normal physiologic activity. In this way it both stimulates and regulates all processes.

When a person is given d'Arsonval or autocondensation treatment, the only sensations, if they experience any, are pleasant ones and I have on several occasions had a patient go to sleep. A current ranging from two hundred and fifty milliamperes upward is used. Daily treatments of twelve to fifteen minutes are to be given at first. I always use a sphygmomanometer both before and after treatment and govern the interval between treatments by amount of reduction of pressure obtained. The reduction is accomplished by a vasodilation of the arteries and not by depressing cardiac or respiratory action. The effect is obtained by relaxing the musculature of the arteries. Even in arteriosclerosis due to senility it is safe to assume that life may be prolonged by the judicious use of this current by delaying the sclerotic process because of improving not only the tone of the muscular coats of the arteries but also because of improving all the metabolic processes. One should not attempt to lower a compensatory hypertension.

I have purposely not attempted to name the many conditions in which electricity has been tried and have enumerated but few in which it has been shown of value. If in this paper I have succeeded in impressing on you the principal effects of the various currents, those fundamentals together with a careful study of each individual case will suffice to enable you to select the proper electrotherapeutic measures.

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CRUSHING INJURIES OF THE EXTREMITIES.*

By R. S. Joyce, M. D.,

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So much has been taught about the aseptic treatment of wounds and such advancement made in this line of surgery, that we might easily forget there is a class of surgery that of necessity is septic. You know what you may promise, so far as your care is concerned, but an element of uncertainty enters into severe accidents that you cannot always estimate. When you have encountered pus in abscess cases you have a pretty good idea whether to drain or not and, also, you can usually estimate quite positively how long drainage should continue.

In gun-shot injuries with modern weapons our line of treatment is usually well defined, but we are often sadly at variance as to the severe crushing injuries so common in modern machinery and transportation. An accident occurs, a workman has an arm lacerated by cog wheels or crushed under the wheel of a car, he is given immediate care and carried to a hospital or place for permanent care. How will you interpret that wound? The deep pressure necessary to produce a serious wound has driven everything in its path to the deepest recess of tissue involved. If the machinery revolves rapidly or the train is moving with great speed, you may be sure that the nerve and vessel contusion is several inches nearer the body than if moving slowly. If you amputate at once, which is seldom necessary unless it be to roughly hew the member off, you must allow for this.

If you amputate you need no stitches at all, but remember in estimating your flaps to be closed later that those on the flexor side of arm or leg contract at least one-third more than on the extensor, and that all contract more if left without stitches. If you have doubtful tissue your bandaging must not prevent a free flow of blood to the stump; it must not be too tight and, if the limb be cold on the second day, remove every part of your dressing and be sure it is not too tight.

I have always believed that deep wounds running parallel with a limb afford as safe drainage as amputation and for years, in crushing of hand or foot where the skin is unbroken, have made deep slashes down through skin and fascia for relief of tension and to afford drainage. I have tested this in such severe infections as that of the gas bacillus, when the patient would not listen to amputation and, though amputation be often afterward necessary, you have saved your patient's life.

In the light of our present time surgery, amputation for compound fracture must grow less. You are tempted to close these wounds but this is a serious mistake; they cannot be left too freely open until all slough and discharge have subsided. They are painted around the edge and in the wound with iodin, loose tissue cut away, loose fragments removed, the wound packed with gauze and the limb cleaned with benzine or gasoline. After cleaning, the packing is changed, the bones placed in as good apposition as possible and a well padded, first aid dressing and splint (not plaster) applied. The wound is dressed again in twelve hours.

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After the patient is thoroughly out of shock you may figure on an anesthetic and a more permanent fixation in a cast, extending well above and below, reinforced on the side opposite the wound with strips of metal and, before the plaster sets, a window much larger than the wound is made. I prefer an external bone plate to steady the bone ends, as I don't think this any place for Lane plates. The wound is dressed twice a day and no irrigation used, although I often use peroxide mopping.

On the third day the whole cast is removed, as it is usually well stained, and a fresh one applied. This one lasts for some time, but is changed when it gets filthy about the opening or breaks. You usually find new spots of necrotic skin when your first cast is removed which could not be seen otherwise.

A moulded plaster splint is run back and forth on a board and, when ready to apply, all the padding is laid on the splint and carried under the limb and the padding folded around. This gives you a good bed for the limb to lie on and you don't have to go round and round the limb with your padding, and you don't get it too tight. You then include the moulded plaster splint in your cast and either leave an open space or cut one out.

Where no bone is left unbroken the question of extension, while the permanent dressing is applied, is important. Buck's extension has been so long associated with fractures of the femur that its use in other places has been forgotten. The adhesive is left on under the cast and extension continued for some time after the cast is hard. In rainy weather the plaster hardens slowly.

The subject of sleep, eating and general care of the patient is about as important as the local condition. They run a little fever, around 100°-101°, but if much over this there is probable burrowing of pus. These cases become discouraged and depressed. It is often a good thing to direct their minds toward some occupation for which they will be fitted, provided the injury has ruined their chance of following the present one.

The older method of wiring has proven unsatisfactory for several reasons. In the first place, in bone repair the ends of the bone soften and wire refuses to hold if placed within three-fourths inch of the end. If the wire be not already broken, it hangs like ear-rings. In the next place, it usually has to come out and necessitates reopening the wound.

The screws in external plates are set back an inch or more from the end and hold for weeks and are easily removed. The Lane plate may be put on, if you do so with the expectation of removing it later. When the muscular tone has become reestablished these fractures tend to override and no trifling fixation will prevent it. Bone transplanting is the ideal remedy for ununited fracture after the wound has been healed and cleaned up. Lane plates are far inferior or, I might say, of little use.

Where a necrotic space exists, even when a sinus exists, the bone may be very thoroughly dug out, wiped with carbolic, and a section of bone nailed in for a bridge, the periosteum being closed over same with good result, this even when some discharge from the sinus continues.

The limb can usually be saved if one large blood vessel remains, regardless of nerves, as they can be united. Injury to muscles is comparatively harmless, necrotic skin, practically encircling the limb with deep crushing, usually requiring amputation sooner or later. Repair of blood vessels in crushing injuries is usually useless.

When amputating, after waiting to see how much of a limb will live, you may expect a temperature on the second day of 103°. It should drop on the third day to 99°-100°. You must here figure on drainage or perhaps better yet pack the stump open and close it later.

When will the patient be well and able to work? If you figure a year you will not be far astray. When is a bone united? Not until after six months of proper apposition.

DISCUSSION.

R. T. Richards, Salt Lake City: In a street car and railroad practice it is common to do an immediate amputation. This is the height of folly, for the reason that the severity of the traumatic shock has sometimes not fully developed until 12 or even 24 hours after the injury. If an amputation be attempted during that period you will get the operative, combined with the traumatic shock, and the patient who otherwise could have been saved is going to die. I have seen on several occasions patients brought to the hospital, subcutaneous saline given, pulse raised until it seemed good, operation performed and the patients died. I remember one case, injured by dynamite explosion, who arrived in Salt Lake about 12 or 15 hours afterwards profoundly in shock. We left the case alone, stimulating treatment, for about sixty hours after the injury, the leg being gangrenous, with temperature of 103, when the shock had to a moderate measure disappeared. I had to reamputate later, but the man lived. If you are going to do any work to get rid of hanging stumps or extremities, thoroughly anesthetize the nerves and cut them but do not under any circumstances use a general anesthetic. I believe meddlesome surgery has caused more infections in compound fractures than the fractures themselves. It is a good deal wiser to use a local anesthetic, open the wound widely and make no attempt to keep the wound thoroughly drained, even if you have to make a large incision. Under those conditions you are not likely to get any infection.

J. F. Critchlow, Salt Lake City: During the course of seventeen years, connected with railroad companies and mines, I have treated between 800 and 1,000 cases of severe crushing injuries of the extremities. The methods Dr. Joyce suggests without question will produce the best results. Instead of cutting a man's leg off and doing a formal operation the best surgery is to wait. I recall one case where double amputation was performed three days after the crushing injury, while a perfectly good result could have been obtained with only a single operation.

A. W. Morton, San Francisco: The thing to do in these cases is to prevent shock. You can do that immediately by injecting half a grain of cocain into the subarachnoid space. Otherwise the mangled limb, with the nerves and tissues torn and the bones pushing through, not only aggravates the shock for 12 to 24 hours but you have considerable loss of blood and a wound subject to infection. The pulse comes down immediately, the patient is relieved of all pain and there is nothing carried up the cord to produce shock. After that is done you can remove the mangled limb without shock and relieve any future trouble. I should say do immediate amputation, if necessary by the use of spinal anesthesia. If I didn't want to amputate I would use the spinal anesthesia, clean gently, disinfect with iodin, drain thoroughly and make the patient quiet. As to bone plates, they are excellent if you are careful in their use, but in the lower leg I never use them. By simply separating the tendo Achilles subcutaneously, with a fracture below the knee, you can prevent contraction and any form of posterior, lateral or plaster paris splint holds the bone in perfect position. The tendon unites later without trouble. As to delayed or non-union it is very rare to find such if you place the bones in proper position. With certain fractures in the upper-third of the femur it is always wise to plate immediately, because you will get delayed union or more or less deformity. As to transplantation in bone tissue there are two methods: by chiseling off the bone and placing it in the desired position, or by uniting bone by vascular attachment from an individual or from some of the lower animals.

USE OF IODIN IN EMERGENCY WOUNDS*

By D. K. Thyng, M. D.,

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This paper is based on our observations on treatment of surgical wounds by the surgeons of the State of Washington that come under the Industrial Insurance Act. We note that, in the first treatment of urgent surgical wounds, tincture of iodin is used in about 90 per cent. of all open wounds, the remainder being divided among bichlorid, benzin, alcohol and hot water. Even some surgeons go so far as to put tincture of iodin into the wound itself which, in my opinion, can only do harm, as it will not kill any infection that may be present in the wound at that time, but will injure the tissue, lower its vitality and retard repair.

The principle underlying all first treatment in urgent work is not to try to kill the bacteria present but to limit their spread and growth. To wash an open wound with water or a watery solution may bring to it the first and only infection that comes to it, lower the vitality in the border of the wound and retard healing. If the wound be already infected, water or watery solution is the worst thing that can be applied and tincture of iodin or any other solution will not destroy the infection. It can only do injury to the tissue and trying to disinfect the same only coagulates the blood in the wound. Let it bleed, if not too severe, as bleeding may carry out some infection if there be any present. Fresh blood is the best healing material that can be left in the wound. Disinfectants do not belong to the first dressing.

War records have shown that the best form of treatment to prevent infection is to use no solutions to wash the wound but cover it with dry, absorbent sterile gauze, this replacing all powders of any description or any other material that will become dry on the outside and tend to seal the wound. It is my opinion that, if iodin does any good at all, the benefit is derived from the tanning or hardening process of the epidermis and prevents the spread of the various cocci from the skin into the wound by fixing them. If this be true, the iodin should not be applied beyond the margin of the wound.

The only real claim that is made for iodin that seems to have merit is that of painting around the border of little cuts, small puncture wounds, etc. But where a large surface is exposed, it can only do harm if applied in the wound itself. Quoting from the Vienna Clinical Weekly, "Hecht and Kohlir in their research work have shown that the growth of staphylococci is not retarded to any extent but breed luxuriantly when rubbed up with blood and tincture of iodin."

The medical profession scoffs at the laity for picking up every new thing that is suggested, no matter what the source, but the profession itself, speaking of it as a whole, does the very same thing. By reviewing the methods of the first dressing in the last twenty years, we will find that we have often thought we had the ideal dressing, but in a short time have discarded it for various reasons to take up some more popular fad that was being heralded for some special reason, the majority not knowing just why. We came down through carbolic acid, bicrlorid, iodoform, acentanilid powder, etc. Then the solution used for a time called Harrington's brought us to almost the universal use of tincture of iodin.

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*Read before the Twenty-fourth Annual Meeting of Washington State Medical Association, Everett, Wash., July 14-16, 1913.

We believe that within the next couple of years the profession will have discarded iodin and adopted the views of Prof. A. von Eiselsberg, of Vienna, in the first treatment of urgent surgical dressing. He advocates the dry treatment with nothing but absorbent, sterile gauze and says that, if the surgeon is not situated so that he can wash his hands thoroughly, not to wash them at all for the moisture and scrubbing will only get the bacteria loose so that they will more easily get into the wound. Do not touch the wound at all with the hand. Keep all water and solutions away from it.

König reports that he treated 250 cases of open wounds with no cleansing whatever and only had delayed healing in two and very vigorously warns against the use of tincture of iodin. Von Eiselsberg says that, after twenty years of observation, the washing of wounds with water or some fancied solution is the cause of the larger percentage of infections. We do know that all infections spread much more rapidly where the wound is moist than when dry. It does seem that so far we have missed the real solution of the problem to prevent infections for they are certainly as prevalent in the ordinary work as they ever were.

MYCOSIS FUNGOIDES.*

By C. M. Cole, M. D.,
CALDWELL, IDA.

In 1814, Alibert described a condition which he named "pain fungoid," a disease which he considered allied to yaws. Some years later, because of its mushroom-like growth, he changed the name to "mycosis fungoid." Since that time a few hundred cases have been reported and, for a disease of such comparative rarity, it has been very thoroughly studied, but because of its great diversity of manifestation there has been a marked difference of opinion as to the true character of the disease. At the present time, several types of the affection are generally reognized and are summarized by Dr. Pardee in a paper read before the American Dermatological Association as follows:

First. The usual form that is made manifest by a variable period of disturbed health, accompanied by dermatoses, apparently superficial, of an eczematoid, erythematous, or lichenoid nature, which may appear and disappear several times before they terminate in the formation of fungoid tumors, when death ensues.

Second. A type which begins as an acute lymphangitis of a recurring character, which also ends in tumor formation with fatal results.

Third. The "tumeurs d'emblee" of the French authors which lacks the antecedent eruptions of the other forms.

Fourth. There have been a number of cases reported as leukemia, pseudo-leukemia, and lymphoderma with coincident dermatoses similar to those of mycosis fungoides, but lacking in some essential point the full character of this clinical entity.

The case that I wish to report belongs to the first and more common type and gives the following history and findings:

The patient, a male, 42 years old, married; one child, five years old, in good health. Family history negative. Father and mother both lived to old age and each died of pneumonia. One other child in the family died in infancy, cause of death unknown.

Habits excellent, with the exception that a part of his life he used tobacco in excess.

He has always lived in middle states; farmer, with exception of three years spent in a store; came to Idaho, January, 1911.

At about the age of 14 he had a scaly rash on the front of both arms and on the knees. At this time the diagnosis was eczema; treatment failed in results and was discontinued. The condition remained about the same until September, 1910, when it spread to the forearms and some on the body, the skin becoming more indurated. The itching, which heretofore had only bothered on hot days, became more pronounced and began to interfere with his rest at night. His trouble was now pronounced psoriasis and treated as such, but no benefit resulted from the treatment.

About this time, a small tumor the size of a hazelnut came on the arm on one of the patches of socalled psoriasis. This tumor soon disappeared but was followed by others, all coming from the patches of so-called psoriasis. Some of the new crop of tumors disappeared while others grew to larger size. Two tumors at the elbow were removed when about the size of small oranges. The subcutaneous tissue was not involved in the disease. The growth, however, returned, growing in from the edges of the skin wound. From this time on the disease was rapidly progressive until the arms, legs, body, scalp and face were covered with numerous large and small tumors. The skin between the tumors in many places closely resembled psoriasis. The small tumors were hard, the larger not so firm and many ulcerated. The itching, which was intense in the mid-course, was not so pronounced in the last stages. The lymphatic glands were all enlarged, but this only occurred in the very last weeks of his life. The laboratory report of specimen of tumor removed from the arm was round-celled sarcoma, but the history and clinical aspect of the disease do not bear out the laboratory diagnosis.

The treatment, consisting of x-ray and sodium cacocylate hypodermically, made no impression whatever upon the progress of the disease and death occurred May 9, 1912.

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*Read before the Twenty-first Annual Meeting of Idaho State Medical Association, Pocatello, Ida., Oct. 9-10, 1913.

GASTROENTEROSTOMY UNDER LOCAL ANESTHESIA, WITH REPORT OF A CASE.*

By M. M. NULL, M. D.,
SEATTLE, WASH.

Pyloric stenosis per se is not a common disease, but stenosis as a result of some other well-known pathologic condition is not uncommon. The pylorus is frequently involved in neoplasms of the surrounding viscera and also in adhesions due to trauma. This class of cases is not included in our discussion of the subject.

We may then classify stenosis of the pylorus under four heads: (1) Congenital, (2) cicatricial due to peptic ulcer, (3) neoplasms, (4) hypertrophic stenosis due to long continued chronic gastritis. The case we have to report is of the latter variety.

Mrs. X., of Des Moines, Ia. Age 41, of German-Irish-French parentage. She has had the ordinary diseases of childhood—measles, mumps, whooping cough, broncopneumonia; and at two years she had typhoid fever very severe, which lasted six weeks with complete recovery. She was delicate up to fifteen years of age, when she began to menstruate. After that time she was hearty and strong. She was five feet tall, weight 110 pounds, the average weight for a woman of her height.

She taught school for sixteen years, beginning when she was 17 years old. She was married at 33, and never became pregnant. In September, when she was 31 years of age, she took typhoid fever. She was in the Methodist Hospital, in Des Moines, for six weeks. In the second week pleurisy and pneumonia began, which lasted ten days. At the fourth week what was called appendicitis developed just as she commenced to take a little food. Hot packs were placed on the side and in two days' time all symptoms subsided. She left the hospital in six weeks feeling fairly well, only weak in strength, and in six more weeks' time began her school.

A year and a half after she had typhoid she was married. Her weight at that time was 95 pounds. She was strong and well in every way. She could eat anything and in any quantity she wanted. Six months later she took sick with what was called malaria, although she lived in a non-malarial country and had not been out of the county. The patient does not remember hearing of any other cases of malaria.

The cervical glands enlarged, there were chills and fever and a gangrenous stomatitis, pharyngitis and tonsilitis. The chills usually came at five p. m., followed by fever of about 101°. The blood was never examined. Quinin was administered freely and the therapeutic lamp and iodin applied to the enlarged glands. This condition lasted for two years.

Then she moved to St. Paul and in two months' time the sore throat, chills and fever left. She could eat heartily and her weight got up to 95 pounds. In two more months she began to have trouble with her stomach—fullness, nausea, vomiting and pain which was relieved by emesis. Then the pain got severe on the right side. It was now pronounced appendicitis. She returned to Des Moines for operation. The surgeon found a pus kidney which burst on removal. The appendix itself was quite normal, although it was removed at the operation.

In a few weeks more she felt well, weight 80 pounds and was able to do her own work. Two months later she began to have stomach trouble again. She could not retain food. During this time she consulted doctors in St. Paul and Minneapolis. This condition lasted a year, when she went back to Des Moines. The physician consulted there pronounced the trouble gastric ulcer and said she was too weak to operate on. Her weight was 70 pounds. She took the rest and diet treatment. After six months she went to Rochester, Minn., and stayed two weeks at the hospital. Dr. Will Mayo and staff examined her. She reports that they said they could not locate the trouble but they would make an exploratory incision if she insisted on it. They considered it a case of nervous gastritis. Her weight was 52 pounds. She returned to St. Paul and in a few weeks started for Seattle.

I was called to see her July 15, 1911. She had severe pain in the epigastrium, belching and vomiting of all foods even liquids. There was no tumor and no tenderness in the pyloric region but was diffuse soreness over the whole area. On introduction of food a gastric peritalsis was visible to the eye, running from the left costal border passing forward to Taube's triangle and stopping in a depression. Then a second wave of peristalsis was taken up at this latter point, passed outward beyond the ensiform cartilage and then disappeared downward.

Urine, 24 hrs., 300 cc. Sp. gr., 1025. No albumin, no sugar, no casts.

Blood, Hg., 85; red cells, 2,300,000; leucocytes, 8,000; differential leucocyte count normal.

Stomach analysis. Boas breakfast, amount, 20 cc. No acid by any test. No ferments, no bacteria, no yeast cells, bile in abundance.

Her weight at this time was 51 pounds. She was not able to walk and could not retain food of any description except a very small amount of liquid. Diagnosis, hypertrophic pyloric stenosis.

This is most commonly due to chronic gastritis. It is usually divided into three classes. (1) Gastric cirrhosis of Brinton, characterized by a small stomach, due to proliferation of connective tissue which later contracts, reducing the whole size of the organ.

(2) Sclerosing gastritis of the French school, characterized by changes in other organs, as liver, pancreas, omentum.

(3) Congenital hypertrophic stenosis.

Age and sex. Young adult life, 25 to 40 years. Sex is equally divided.

Pathology. Connective tissue hyperplasia.

Symptoms. At first they are those of chronic gastritis. The complaints are fullness, pressure, distention, eructation and pain. Then motor insufficiency of the first degree develops. After this vomiting and pain are the principal symptoms. Gradually the classic symptoms for dilated stomach come on. Owing to the obstruction there are loss of weight, constipation and reduction in the amount of urine. The appetite, or rather the ability to eat, remains good in the majority of cases.

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*Read before King County Medical Society, Seattle, Wash., Oct. 6, 1913.

Einhorn reports that about half the cases had no free CHl. Boas reports that all his cases had no HCl., but had lactic acid. Hemmeter reports HCl. in his cases present at first, which became less and less until later both free and combined HCl. was absent, then later lactic acid became positive. Boas considers the absence of free HCl. and ferments an important factor in the diagnosis of hypertrophic stenosis caused by gastritis.

Diagnosis. If the patient comes to the physician early, a differential diagnosis between benign stenosing gastritis and carcinoma presents difficulties. If we can clearly ascertain a history of many years of suffering, together with aggravation of symptoms and periods of increase and decrease of body weight, with improvement on selected liquid diet, decrease in weight on solid food, we may suspect a benign process. Marked variations do not occur in carcinoma. Periods of improvement in the latter disease, if they occur at all, do not exceed a few weeks. In carcinoma the stagnation of food in the stomach increases from week to week as the disease progresses no matter on what diet the patient is placed.

In hypertrophic stenosis the symptoms may disappear for months on change of diet, liquid diet or lavage. Only in the last stages does the stagnation become absolute. Glandular swellings, coffee-ground vomit, ascites, metastases or the presence of the Oppler-Boas bacillus in the stomach contents may indicate carcinoma. In 53 out of 55 cases of carcinoma the Oppler-Boas bacillus is present. This is not found in benign stenosis. The presence of a tumor in the pyloric region has no diagnostic value, according to Hemmeter, as the contracting tissue may form a hard mass. The two important things are to follow the weight of the patient and the gastric contents. In a fatal case reported by Hemmeter, HCl. was present ten months before the fatal termination; after eight months there was no free HCl. present.

A diagnosis between hypertrophic and cicatricial stenosis caused by gastric ulcer is important. In hypertrophic stenosis resulting from chronic gastritis there will have been no preceding gastric nor intestinal hemorrhage, as usually occurs in cases resulting from a cicatrix from an ulcer. If the case be due to chronic gastritis, HCl. will eventually be absent. If from a cicatrix it is present and increased. In cicatrical stenosis the stomach is always dilated. In hypertrophic stenosis it is usually not dilated and may be small.

Prognosis. The disease is fatal unless an operation be undertaken in time. The remarkable variations in improvement and aggravation are apt to mislead the clinician into a favorable diagnosis.

Treatment. The treatment is gastroenterostomy.

In this particular case we tried to build up her strength and get her ready for an operation. We put her on weak liquid food which was not retained. Then we put her on marshmallows and chocolate cream candies which was the only thing she could retain. In two months' time we gained two pounds. We employed a regular masseuse who massaged her each day. This strengthened the muscles so that she could walk about in the house at will.

On Nov. 2 we operated on her at the Noble Hospital. No anesthetic was given but we used cocain subcutaneously. One-half an H. M. C. tablet was given one hour before the operation and at the time of the operation gr. 1-30 of strychnin.

The stomach was not dilated. The walls in the pyloric end and toward the median posterior dependent portion was about a centimeter and a half in thickness, of tough connective tissue. The pylorus would not admit a darning needle. It was bound down firmly by old hyperplastic tissue. There was no indication of malignant disease.

We performed a posterior gastroenterostomy by the Moynihan-Mayo method. She had little shock, not so much as if she had taken ether. This method is, however, only recommended in severe cases, where a general anesthetic cannot be given. But it puts in the range of operation cases that by general anesthesia are considered hopeless.

She made an uneventful recovery and in three months' time was doing her own housework. She has steadily gained in weight till now she weighs 80 pounds. She eats anything she likes without any trouble whatever. It is now two years since the operation and we may safely say that, from a clinical standpoint, she is free from carcinoma.

CONCLUSION.

(1) It is safe to operate in severe cases under cocain by the method adopted by Kocher, even in as severe operations as gastroenterostomy. When it is done it is not safe to use more than the maximum dose, gr. ½ and, if properly used, little or no shock results.

(2) In a patient where by disease there is no acid secretion, as in this case, the secretion of digestive juices will become normal if the food may find a free exit and the glands have not been destroyed.

(3) The absence of HCl. does not always mean cancer.

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EDITORIAL

HOSPITAL ASSOCIATIONS IN WASHINGTON.

The hospital association is an institution created within recent years for the ostensible purpose of caring for the sick individually or collectively, at a small cost to the patients, providing them with medical services, drugs and necessary hospital care. Since they are nearly all, however, managed and financed by laymen, whose prime object is to enrich themselves in this line of business, these associations are in reality a means of exploiting the medical profession, in that the promoters through this means divert legitimate practice from established physicians, in their stead employing a few physicians for as low a contract price as can be negotiated with available individuals. This sort of medical practice is in essence the same as lodge and other forms of contract practice which has become so prevalent in many parts of the land.

Within a few years these hospital associations have multiplied in Washington and Oregon fully as much as in any other section of the country. While they have become a material source of anxiety to the medical profession, they have not until recently been looked upon as a menace by the officials of the state. Last fall, however, they were brought to the attention of the insurance department of Washington and were subject to investigation by the insurance commissioner who discovered that a number of such associations were selling contracts guaranteeing various services and indemnities to the holders thereof. It was learned that they were incorporated with authorized capitals ranging from $5,000 to $100,000, but they provided no cash assets to guarantee the fulfillment of the obligations thus created and there was nothing to prevent the collection of large sums of money by irresponsible parties who could easily depart with the money and leave the members in the lurch, which actually happened in a few instances.

On submission of several contracts to the attorney-general last November, he gave the opinion that the business transacted by these associations was insurance and was carried on in a manner in conflict with the insurance laws of the state. The insurance commissioner quotes from the insurance code of 1911, of which Section 1 states:

"Insurance is a contract whereby one party, called the insurer, for a consideration undertakes to pay money or its equivalent, or to do an act valuable to another party, called the insured or to his beneficiary, whereby the party insured or his beneficiary suffers loss or injury."

Section 2 defines insurance company as, "all corporations, associations, partnerships or individuals engaged as insurers in the business of insurance."

If the holder of such a hospital association contract becomes ill and needs a doctor's care or hospital services, he receives such attention at the expense of the association, an act which is equivalent to money and an act valuable to the contract holder. The principal ingredients of such a contract are the consideration, the risk and the indemnity, the consideration being the premium for the insurer's undertaking, the risk being the perils or contingencies against which the insured is protected, and the indemnity being the stipulated services furnished the insured in case he has suffered loss or damage through the perils or contingencies specified.

Under the decision of the attorney-general the insurance commissioner held that this sort of business is insurance and that the insurance department must require that all conducting such business shall comply with the insurance laws or cease operations. They will not be permitted to continue unless they can show financial responsibility sufficient to warrant legitimate operations as provided by the laws governing insurance business of all kinds.

After the announcement of this decision the different hospital associations in the state were notified that they must cease business at a definite date unless they could provide securities of $100,000 each, as provided by the insurance law. As a result, several small companies immediately went out of business. Whether the larger ones carrying on this line of work will continue is a problem for the future to decide. While it is a source of satisfaction to the medical profession that a halt is thus placed on the indiscriminate floating of such associations, it is likewise gratifying that the public is thus to be protected against such easily established and conducted forms of inefficient and potentially fraudulent medical practice.

THE PHYSICIAN OF THE FUTURE.

Among those who have practised medicine for one or two decades there is a widespread complaint over the decrease in the amount of practice and the gradual disappearance of certain long-established forms of illness. There was a time, for instance, when a doctor would regularly depend upon the income from his typhoid patients to educate his children, but now he rarely sees a case of that disease. Through the universal medical inspection of school children the diseases incident to disorders of nose, throat and mouth are gradually being eliminated. The education of the public in hygiene and sanitation has well nigh put a stop to many of the ordinary contagious diseases. Therefore, it would appear that the physician of the future must rearrange to an extent his former routine of practice.

On a recent lecturing tour through the Northwest Dr. Woods Hutchinson, the well-known commentator on the medical affairs of doctors and the general public, has uttered some interesting suggestive predictions along this line. The doctor of the coming age will have to do, not so much with curing sickness which has become established, as preventing its getting a hold on the individual. He will be engaged at a fixed annual sum to care for a family and see to it that they are not caught in the pitfalls of illness. To this end he will at stated intervals make complete examinations of each member of the family, including the teeth and the skin, to see that no foes from without are getting a foothold in the individual's body. As his income will be a fixed one, it will be to his interest to particularly study prophylaxis rather than treatment. To this end the medical schools will pay more attention to the teaching of hygiene, sanitation and prophylaxis. A hint as to the practicability of such a form of practice is offered from the experiences, during the last year and a half in England, of the medical treatment of the people at the hands of the government. Here every person with an income of $500 or less is treated by the government physicians at an annual payment to the latter of $1.50 per patient. The installation of this system was at first received with widespread hostility on the part of the medical profession, whose direful predictions, however, have not been realized. It has turned out that the great mass of charity patients hitherto treated free by the profession, by the payment of this small annual fee, have actually increased the income of the doctors and the financial outlook for the future of the latter is not nearly as dark as anticipated. Furthermore, the amount of work devolving upon the doctors has been materially curtailed by reason of the fact that this large portion of the public, whose medical treatment is already assured for the year, consult their doctors for trifling illnesses easily relieved at the time but which unattended often result in prolonged and serious illness. Similar results have followed in large industrial plants where physicians are retained exclusively to attend the employees. By giving proper attention to every minor injury, serious results and infections are averted, greatly to the efficiency of the individual employee and the saving of many to the plant. Along these lines the doctor of the future will doubtless pursue the practice of his profession to his own ultimate satisfaction and greatly to the benefit of the public at large. This does not mean that the need for physicians will decline. On the contrary, the field for them will probably widen but their equipment will be more varied and they will be of better quality.

ERRATUM.

In our February issue an error was made in stating the Washington Medical Practice Act requires the filing of licenses with the county auditor. That was the old territorial provision. The state law has always required that licenses shall be filed with the county clerk.

MEDICAL NOTES

OREGON.

The January Meeting of the Examining Board. The winter examination was held in Portland in January. There were seventy-five applicants, of whom forty-two were successful. There were five women, of whom three obtained licenses. There were two applicants from Finland. The list included two osteopaths, both of whom failed. The list of successful applicants with their addresses is as follows:

Anna C. Ackley, Portland; A. E. Anderson, Portland; E. E. Anderson, Portland; Alfred Barradell, Portland; Mary S. Barradell, Portland; R. L. Benson, Portland; Nathan Benyas, Portland; Emily F. Bolcom, Portland; G. L. Boyden, Pendleton; A. P. Culbertson, Heppner; G. C. Dunham, Portland; J. E. Else, Portland; S. J. Ermentrout, San Francisco, Cal.; C. W. Hamilton, Portland; N. A. Hartman, Astoria; E. H. Hobson, Stayton; L. C. Hobson, Salem; O .N. Holsti, Portland; M. G. Howard, Portland; L. L. Hoy, Portland; J. A. Hughes, Portland; F. D. Humphrey, Prairie City; P. J. Keizer, Portland; A. E. Kinney, Portland; H. F. Leonard, Portland; Edith A. MacDowell, Portland; C. C. Moffat, Portland; K. P. Moran, Mt. Tabor; R. W. Poellintz, Medford; E. F. Reamer, Salem; C. T. Ross, Portland; H. E. Schlegal, Portland; C. A. Sears, Vale; J. M. Smithwick, Portland; C. U. Snyder, Montavilla; H. Y. Spence, Springfield; G. J. Sweetland, Jr., Salem; A. W. Tiedeman, Portland; C. W. Tidball, Portland; C. C. B. VanVlerah, Portland; M. A. West, Portland; C. E. Wheeler, Klamath Falls.

County Hospital at Roseburg. A new county hospital is to be erected at Roseburg. The building will be 50 by 60 feet, fairly modern in its appointments and it is hoped will provide for the county's poor and helpless for some time to come.

New Hospital at Portland. Portland is to have a new hospital, work upon the first unit of which has already commenced. It will be the new home of the Emmanuel Hospital, operated by a charity association of the Lutheran Church, and will be located in Upper Albina.

Oregon Epidemics. Pendleton and St. Johns have both been suffering from epidemics of smallpox, which has been serious enough to close the schools and prevent many public gatherings. Scarlet fever has been reported to be epidemic in Oregon City. The epidemic of measles which prevailed for some time in Enterprise is at last under control.

Dr. F. R. Humphrey, who recently passed the state medical examination, has located at Prairie.

Dr. E. H. Thornton, of Portland, who was recently bitten by a mad dog, will take an ocean voyage in March for the benefit of his health, expecting to return about the middle of May.

Drs. Sweeny and Shearer, of Grants Pass, have opened a private sanatorium and hospital.

Medical Weddings. Dr. C. W. Robins, of Port Orford, and Miss Alice C. Bourque, of Bangor, Maine, were married last month in Portland and have returned to Port Orford. Dr. Thompson Coberth, of The Dalles, and Miss Pearl Gibbons, of Palouse, Wash., were married and will reside at The Dalles.

WASHINGTON.

State Commissioner of Health. At the last meeting of the State Board of Health, Dr. E. R. Kelley, of Seattle, was reelected Commissioner. He will give up his private practice and give all his time to the work of the Board.

Girls' Training School. It has been definitely decided to build a girls' training school near the State Institution for the Feeble Minded, at Medical Lake, the locating commission named by Governor Lister having definitely decided upon this place and called for bids.

Public Health Lecturer. A series of lectures on public health topics to be given by Mrs. R. C. McCreedie, of North Yakima, has been decided upon by the State Board of Health as a means of cooperation between the Board and the women's clubs of the state. Mrs. McCreedie has the distinction of being the only woman in the United States who is a member of a state board of health.

Superintendent for Medical Lake. Governor Lister has appointed Dr. A. S. Oliver Superintendent of the Hospital for the Insane at Medical Lake. Dr. Oliver has been acting superintendent since the resignation of Dr. J. M. Semple several months ago.

Hospital at Puyallup. A new hospital has been opened in Puyallup which is thoroughly equipped with all the modern improvements. It is in charge of Misses Merwin and Nagley, two graduate nurses.

Tuberculosis Hospital at Tacoma. Plans have been submitted to the county commissioners of Pierce County for a tuberculosis hospital to be built on the Lakeview grounds near Tacoma. The building is to cost about $20,000.

Contagious Diseases. The spring crop of acute contagious diseases is beginning to appear. Epidemics of greater or less extent having been reported from numerous places. Kelso and Waterville have the measles, Spokane numerous cases of mumps, Walla Walla several severe but not yet fatal cases of smallpox.

Dr. W. E. Abrams, of Hillyard, was found unconscious in his garage in the morning of Feb. 6. The condition continued for several hours, but there have been no permanent bad effects from his attack. He states that after cranking his machine he had a sudden attack of dizziness.

Dr. T. J. Rederich, of Vancouver, cut his left hand severely with a razor. Arteries and ligaments were severed to such an extent that he was unable to return to his practice for nearly a week.

Dr. H. H. Canfield, of Seattle, was seriously injured while coasting at Scenic Hot Springs last month. He sustained a separation of the symphysis pubis and injury of one of the sacroiliac articulations.

Dr. E. VanZant, who has been critically ill at St. Joseph's Hospital at Vancouver, Wash., is slowly recovering.

Dr. Anna Hubert, who had the good fortune to have her preliminary education in the schools of Seattle, recently acquitted herself with honor before the State Board of Medical Examiners, and intends to practise in her home city.

Dr. H. D. Miller, of Seattle, has been appointed assistant physician to the Northern Hospital for the Insane, at Sedro-Woolley.

Dr. Mary MacMillan, of Spokane, was operated on the latter part of January for appendicitis. At latest reports she was doing well and will soon be able to return to practice.

Dr. W. E. Cass, who for five months had charge of the Northern Hospital for the Insane, has returned to Vancouver, Wash., where he will resume practice.

Dr. Geo. R. Smith has been appointed City Health Officer of Mt. Vernon.

Dr. and Mrs. Sidney MacLean, of Tacoma, have left on an extended eastern trip during which Dr. McLean will do post-graduate work.

Dr. J. G. Hetfield, of Deer Park, has left for Aberdeen, South Dakota, where he is to take charge of a sanatorium.

Dr. Robert Kearns, of Spokane, who has been suffering from a severe attack of blood poisoning, has entirely recovered.

Dr. E. C. McKibben, formerly of Everett and Vashon Island, has now located in Kirkland.

Dr. and Mrs. Martin, of Sumas, have left for California, where the doctor expects to locate.

IDAHO.

The Bethany Deaconess Home and Hospital, at American Falls, has been formally opened and is now receiving patients.

Dr. J. K. Clarke, of Lewiston, has been notified of her appointment as State Delegate to the National Child Labor Convention at New Orleans.

The General Hospital at Pocatello has been taken over by the city and county officials for the sum of $12,500, to be operated as a joint public institution.

Dr. T. W. Farrar, of De Lamar, has left for Chicago, where he will take a postgraduate course.

Dr. J. D. Guy and Miss Vere Aaron, of Sand Point, were married the latter part of January.

An Epidemic of Measles has caused several deaths in Twin Falls and smallpox is reported from Kellogg.

OBITUARIES.

Dr. S. T. Linklater died at Portland, Ore., Feb. 9, from a fractured skull, the injury resulting from being struck by an electric train at Elmonica a few hours previously. He had been to Beaverton for a call and at midnight was left at the station to await the electric train. There were no witnesses to the accident nor evidence as to its exact nature. The doctor was born at the Orkney Islands, off the coast of Scotland, in 1853. He attended school at Stromness, in 1878 entering the University of Edinburgh, where he graduated in medicine and surgery in 1882. He practised at Leith, Scotland, for one year and started for Australia in 1883, stopping at Hillsboro, Ore., to visit a sister and concluded to remain there. Since that time he has practised in that city except for the years, 1891-2, which was spent in medical studies in Europe. He had a wide circle of acquaintances and ranked high as a physician and surgeon. For a number of years he edited a newspaper beside attending to medical practice.

Dr. Salathiel Hamilton died at Roseburg, Ore., Feb. 6. He was born at Morgantown, West Virginia, in 1828. His boyhood was spent on an Ohio farm, where he attended district and high school. He later studied medicine and practised until 1852, when he started for the Pacific coast with a party of friends in search of gold. Arriving at Roseburg he took up a donation claim about five miles from that city. He there continued the practice of medicine until 1855, when he located in Roseburg, where he continued to practise for nearly forty years. During 1855-6 he served in the Rogue River Indian war as surgeon. He was president of the Coos Bay Wagon Company, which built a wagon road from Roseburg to Coos Bay in 1870. During his long life he was prominently identified for the development and progress of both city and county. He established the first drug store in Douglas County, which still exists in Roseburg.

Dr. D. T. Rigsby died at Nyssa, Ore., Jan. 27. He was born in Glasgow, Mo., in 1834, and moved to Colorado when a young man, where he received his medical education. He enlisted in the Civil War and rose to the rank of captain, being promoted on the field of battle for bravery. He came to Oregon in 1884, where he remained and practised until his death.

Dr. R. L. Willoughby died at Eugene, Ore., Feb. 16, 1914, following a slight illness of one week's duration. He was sixty-three years of age and was a pioneer of Oregon, being for many years a resident of Eugene. He leaves two sons, physicians, one of them practising in Philadelphia.

REPORTS OF SOCIETY MEETINGS

OREGON.

PORTLAND CITY AND COUNTY MEDICAL SOCIETY.

Prest., A. W. Moore, M. D.; Secty., G. S. Whiteside, M. D.

The regular meeting of Portland City and County Medical Society was held Feb. 4, 1914, with Prest. A. W. Moore in the chair.

Members present: Drs. A. H. Johnson, F. Wood, Bettman, Baar, Myers, MacLaughlin, Flagg, Else, Welch, Payne, Webster, Hyde, Parker, Mann, Campbell, Sears, Rybke, Mackenzie, Tucker, Sternberg, O'Day, Wright, Fleckenstein, Moore, Brown, Slocum, Spencer, Boyd, Rosenberg, Smith, Sabin, Keehle, Hoffman, Browning, Wade, Holden, Petitt, Briggs, Selling, McClure, Howard, Manion, Fenton, Watkins, Tamiesie, Whiteside, Barbee, Nunn, Tilzer, Townley, Rand, Shea, Strohecker. Elected to membership: Drs. Vose, Benson, Loeding, L. Brooke. Proposed for membership: Drs. Else, Henton and Grant.

Dr. Wright makes further report on man with steel in the eye.

PAPERS.

A Fermented Medicinal Milk. By Dr. Tilzer. Its history, morphology of ferment, physiologic and therapeutic status. Translations from Russian authors.

Dr. Baar, in discussion, gives some credit to Kefir and that it is of service in cases of constipation; is easily borne by the stomach, but no further does he agree. Acetic and lactic acid are of no service. Quotes from Metchnikoff's book and says his work is all right in a test tube but not in the human intestine. Fermentation bacteria in children yield to Kefir, lactic acid, etc. No right to claim more for lactic acid ferments.

Surgical Treatment of Gastric and Duodenal Ulcer, With Detailed Report of Ten Cases. By Dr. S. C. Slocum. Deals with acute ulcers, bleeding. Must be sure to demonstrate ulcer present. First one-half is favorite point in duodenum. Gastroenterostomy best operation. Saddle ulcers must be excised. Six loops used as traction sutures instead of eight. Dr. Coffey describes operation. Exhibits x-ray plates and details of ten cases.

Discussion opened by Dr. O'Day. Details experiment conducted by self on meats rare, well cooked and raw, in 2 per cent. HCl. Thinks gastric and duodenal ulcers due to disturbance of circulation of walls of the stomach. First principle in treatment is absolute, horizontal rest to equalize circulation. Should follow Cushing's method of aseptic food in treatment. Saddle ulcer without obstruction should be excised. Posterior gastroenterostomy should not be jumped at; recommends lavage first.

Dr. Else wants to know what percentage of ulcers become malignant.

Dr. A. W. Moore recites a case of perforating ulcer of lesser curvature.

Dr. Mackenzie thinks symptoms almost always classical of duodenal ulcer; pain from one to two hours after food; emaciation also common. Has never had hemorrhage after operation. Uses clamps. Small bleeding ulcers are relieved by gastroenterostomy. Indurations should be excised. Typical operation relieves all symptoms.

Dr. Tamiesie thinks infection has great deal to do with etiology.

Dr. Slocum, in closing, says that 50 to 60 per cent. of ulcers have a carcinomatous base is not necessarily true. Must see cases early to make diagnosis in perforating ulcers.

The second regular meeting of the society was held in Portland, Feb. 18, Prest. A. W. Moore in the chair.

Members present: Drs. Buck, Slocum, Sears, Selling, Payne, Dammasch, White, Else, Ainslie, Mackenzie, Kistner, Waugh, O'Day, Vose, Geary, Williamson, Bettman, Townley, Kiehle, Fenton, Myers, Forbes, Parker, McClure, Watts, A. W. Smith, House, Sabin, Gillert, Koehler, Hamilton, Bilderback, Galbreath, P. Rockey, A. E. Rockey, Benson, Werner, Wellington, Shea, Barbee, Taylor, Dillahunt, Rybke, Flagg, Booth, Johnson, Visette, Whiteside and Rosenfeld. Proposed for membership: Drs. Bilderback and Kanaga. Elected to membership: Drs. Henton, Else and Grant.

PAPERS.

Stricture of the Esophagus. By Dr. A. E. Rockey. Showed Mixter's ingenious apparatus with thread swallowed and shot on a wire passed on this as a guide. Showed patient and demonstrated method of passing the instrument.

Discussion by Drs. K. A. J. Mackenzie and G. S. Whiteside.

Conservation of Vision. By Dr. J. L. McCool. He tells of a society having this for its object and the importance of it. Showed lantern slides.

Discussion by Drs. Fenton, Kiehle, Geary, Waugh, White and O'Day.

WASHINGTON.

KING COUNTY MEDICAL SOCIETY.

Prest., D. H. Palmer, M. D.; Secty., G. W. Swift, M. D.

The regular meeting of the King County Medical Society was held in the Seattle Chamber of Commerce, Feb. 2, 1914. Meeting was called to order by President D. H. Palmer, 86 members being present. Minutes of the previous meeting read and approved.

Applications of Drs. H. A. Shaw and I. C. Brown were read. Drs. E. E. Beckett and L. H. Maxson were admitted to membership.

The result of the ballot by mail for candidates for freeholders was read. J. B. Eagleson, having received the majority of votes, was chosen and filed his application. Out of 300 ballots mailed 203 replied.

The following program was presented:

LABORATORY DEMONSTRATIONS.

Rabies, Diphtheria, Typhoid. By A. U. Simpson.

Discussion: Drs. Kelley, Snively, C. F. Davidson, H. J. Davidson.

Work on the Plague. By C. F. Davidson.

Discussion: B. J. Lloyd.

Polypus of the Uterus Showing a Beginning Squamous Cell Carcinoma. By O. J. West.

Presentation of a new bone saw. By J. T. Mason. Discussion by J. C. Moore.

The valopticon was used for the first time in demonstrating the specimens of brain and uterus. It was operated by Dr. H. C. Plummer.

President Palmer read the names of the men forming the committees for the current year. There being no further business the meeting adjourned at 10:45.

The second regular meeting of the society was held Feb. 16. Meeting was called to order by Prest. Don. H. Palmer, 103 members being present.

Minutes of the previous meeting were read and approved. Applications of Drs. Layton and Leede were read. H. A. Shaw and I. C. Brown were elected to membership.

Clinical case by W. McDowell. Discussion by J. H. Snively.

PAPERS.

Banti's Disease. By M. D. Sturgis. Discussion by Drs. Neu, Fick, Turner, Lensman and Jones.

Local Anesthesia. By T. Torland. Discussion by Drs. Lee, Jones, Würdemann, Slyfield, Sturgis and Horsfall.

E. B. Burwell, in behalf of the Puget Sound Academy of Ophthalmology and Oto-Laryngology, invited the members to be present at a meeting of the academy on Tuesday evening.

The secretary read a report from the board of trustees concerning the Mutual Health Association.

H. J. Davidson explained that the committees on Public Health and Legislation and Press and Publication wished to submit a plan of campaign to secure the election of J. B. Eagleson, on March 3, as a member of the freeholders' convention to draft a new city charter. He mentioned the work that had already been done with the newspapers and asked for subscriptions of money to send out cards. The matter evoked a lengthy discussion.

WHATCOM COUNTY MEDICAL SOCIETY.

Prest., S. J. Torney, M. D.; Secty., W. W. Ballaine, M. D.

The monthly meeting of the Whatcom County Medical Society was held in the Chamber of Commerce rooms Feb. 9, with the president in the chair. Drs. S. S. Howe, of Bellingham, and Alexander Thomson, of Sumas, were elected members of the society.

Dr. L. B. Sims, who until recently was located in Blaine, was given a transfer to Pierce County Medical Society, where he is now located.

PAPER.

Cardiac Disease in Children. Dr. F. M. Sprague read this interesting paper, giving special reference to prognosis. After a full discussion the meeting adjourned.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Prest., R. W. Perry, M. D.; Secty., E. B. Burwell, M. D.

The regular monthly meeting of the academy was held at the Seattle Chamber of Commerce Feb. 17, following a dinner at the Seattle Athletic Club. Dr. Perry in the chair.

Members present: Drs. Perry, Pontius, Swift, Hemmeon, Burwell, Wanamaker, Bentley, Wood, N. P. Hawley, Jones, Gray, Klempner, Plummer, Hoffman, Adams and Greenstreet. Visitors: Prof. Trevor Kincaid, of the University of Washington; Drs. Trowbridge, Lloyd, Cartwell, Appleton, Balance and Bell.

CLINICAL CASE.

Congenital Ptosis of the Right Eye. By Dr. Swift. Boy ten years of age. The operation performed was Wilder's modification of Motais' operation, consisting in making an incision in the upper lid, as in the Hotz operation, cutting down to the tarsal plate, bringing the muscle flap through the fibres of the levator palpebrarum and inserting it forward to the tip of the lid margin, thus getting a much greater effect than in the simple Motais. The result was perfect. Three degrees of hyperphoria remain, but this is rapidly disappearing.

Dr. Perry read a communication from Dr. Allport, chairman of the Bureau for the Conservation of Vision, of the A. M. A., asking him to take charge of this work in the State of Washington and to appoint lecturers to the different cities to carry on the work of the bureau. He showed a series of slides intended to illustrate these lectures and asked for suggestions from the members as to how this work should be taken up by the academy.

Development of the Eye as Illustrated by Comparative Anatomy. By Prof. Kincaid, with lantern slides. Starting with the simplest forms of life, in which the whole organism responds to light impulses, there being no special sense organ, he showed how in other low forms pigment spots appeared especially active to light, then the gradual development of a lens, this lens in the lower forms only serving to concentrate the light and not to form images; so to the higher camera-eyes of molluscs and the highly specialized compound-eyes of insects, to the still more highly specialized forms of the vertebrates which contain all the essential elements of the human eye.

A vote of thanks was tendered by the academy to Professor Kincaid for his most interesting and instructive lecture.

BOOK REVIEWS

Edited by KENELM WINSLOW, M. D.

Cunningham's Text-book of Anatomy. Edited by Arthur Robinson, M. D., F. S. C. S., Prof. of Anatomy University Edinbugh. Fourth edition; cloth; 1596 pages; $7.50. Wm. Wood & Co., New York. 1913.

This fourth edition is the work of Dr. Robinson who, at the death of Dr. Cunningham, took his place as professor of anatomy at Edinburgh. The first section is on embryology but histology, which in other anatomies is given a place, is not considered. This section was written by Robinson and the results of the latest investigations along this line are given. To make the subject clearer over 100 illustrations are used, in most of which colors are employed. Robinson also has revised and partially rewritten the section on the vascular system. The following authors have revised and rewritten to a large extent all the other sections of the anatomy: Professors Berry, Dixon, Geddes, Hepburn, Howden, Paterson, Smith, Stiles, Thomson and Waterston. These men have accomplished their work so well that there seems left absolutely no room for improvement. Whatever part of the anatomy is referred to the same clearness and conciseness is evident and that, too, without the loss of a single important detail. The book is made more valuable by the profusion of illustrations, many of them new and a great many in colors. They are illustrations that illustrate. The Basle nomenclature is used, as in all the latest anatomies, but the old terminology is also given. In short, this text-book so thoroughly up-to-date is one of the best teaching instruments we have today in the English language. It is a worthy rival if not the peer of Gray. TURNER.

Modern Medicine. Its Theory and Practice. In original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England, etc., and Thomas McCrae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia, etc. In five octavo volumes of about 1,000 pages each, illustrated. Volume I, Bacterial Diseases, Diseases of Doubtful or Unknown Etiology, Non-Bacterial Fungus Infections, the Mycoses. Just Ready. Price per volume, cloth, $5.00, net; half morocco, $7.00, net. Lea & Febiger, Publishers, Philadelphia and New York.

Volume I of this standard work treats bacterial diseases, diseases of doubtful or unknown etiology, nonbacterial fungus infections and the mycoses. Each subject is dealt with in a concise, yet very instructive way by authors well acquainted with the subjects. The most modern ideas and facts are taken into consideration. The well established reputation of this work makes further account seem unnecessary. LEEDE.

Genitourinary Diseases and Syphilis. By Edgar G. Ballenger, M. D., Adjunct Clinical Professor of Genitourinary Diseases, Atlanta Medical College, etc., assisted by Omar F. Elder, M. D. The Wassermann Reaction by Edgar Paullin, M. D. Second Edition Revised; 527 pages with 109 illustrations and 5 colored plates. Price $5.00 net. E. W. Allen & Co., Atlanta, Ga.

The second edition of this work has been brought down to date. The chapters are well divided and subindexed in the text, making it easy to find the information wanted. It covers practically the whole field of urology and allied diseases. The author has put his individuality into his book which makes it very readable, and it is to be recommended to the specialist as well as the practitioner. The cuts are good but not as clear as they might be; otherwise the book is excellent. Seven hundred and fifty cases of acute gonococcus infection have been cured in from three to six days at the author's clinic. This has been accomplished by placing 25 minims of a 5 per cent. argyrol in the anterior urethra and sealing the meatus for six hours, this being done once a day. In the cases reported as cured in six days the patients on the last day were tested with several pints of beer. The complement fixation reaction, preparation of vaccines, including phylacogen, Wassermann test, the newer kidney functional tests and pyelography are very clearly described so that any one can understand them. PEACOCK.

Pyorrhea Alveolaris. By Friedrich Hecker, B.Sc., D. D. S., A. M., M. D., Member of Academy of Science, St. Louis; Consultant St. Margaret's Hospital, Kansas City, etc. $2.00. Cloth, 157 pages, illustrated. C. V. Mosby Co., St. Louis, 1913.

There has been recently quite an eruption, to use a dental term, of works on pyorrhea, both here and abroad. The writer thinks the disease more often due to general than local causes. He classifies the varieties of pyorrhea according to their etiology, as diabetic, nephritic, infective, gastrointestinal, senile, presenile, traumatic—chemic, mechanic and thermal—and that due to bacterial irritants. This all in the first chapter. The succeeding chapters are devoted to bacteriology and technic, in making smears, cultures; four chapters to making vaccines, and a short chapter on applying them. The book does not seem to be a very practical one for practising dentists. One can hardly expect such a one to be in turn bacteriologist and physician. The writer's ideas are not novel and his treatment in almost every variety of the disease consists in the use of antiseptic and astringent local applications and autogenous vaccines. The local treatment of the teeth and gums by a dentist and especially the removal of tartar and destruction of pus pockets so that the gums will adhere to the peridental membrane, is of the greatest importance. If the dentist calls in a physician to look into the patient's constitutional condition and give a vaccine in persistent cases, so much the better. But to teach the dentist to be both physician and bacteriologist in the space of a few pages seems a hopeless and useless task. To the physician only the first and last chapters would appeal, as he is familiar with the subjects in the remaining chapters. WINSLOW.

The Medical and Sanitary Inspection of Schools. By S. W. Newmayer, A. B., M. D., in charge of the Division of Child Hygiene, Bureau of Health, Philadelphia. 12mo, 318 pages, with 71 engravings, and 14 full page plates. Cloth, $2.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

To one who is familiar with the workings of a school inspection division, the book seems elemental and inadequate, as well as seriously inaccurate in some of the most important statements. Parts I, II and IV cover the topics in a general way, giving the experiences of various cities, the generally accepted methods of procedure, etc., pointing out advantages here and disadvantages there, but seldom giving a sharp-cut statement of the author's opinion, which we would expect to be of so much value after the extensive experiences he has had in this work. The inaccuracies referred to are more evident in Part III, and are errors of commission as well as of omission. For instance, under the topic, "diphtheria" we read, "diphtheria is contracted by inhaling the expired breath of a case of the disease, or a carrier (a clinically normal throat with virulent germs in it) or from air contaminated by the germs from infected clothing or discharges from the ears, nose and throat." Such a statement cannot pass without a challenge; it is most inaccurate. In the opinion of the reviewer, the book falls far short of what we would expect from a man who claims, as his excuse for writing it, twelve years experience in the work of medical inspection of schools and three years in charge of the division of child hygiene in the Bureau of Health in the city of Philadelphia. DAVIDSON.

Principles of Surgery. By W. A. Bryan, A. M., M. D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. Octavo of 677 pages with 224 original illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $4.00 net.

It is a pleasure to review a book on the principles of surgery because we are continually reminded of their importance when we attempt to build the superstructure. The modern surgeon is not encouraged to keep in touch with fundamental facts as he is with operative technic. In this book Professor Bryan has covered the field, embodied therein the newer teachings of proven worth and eliminated some of the older ones which have not withstood the test of time. He has written in an attractive style, amplifying the text with numerous original illustrations. We commend this work most highly. FORBES.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume II. Number VI. (December). Octavo of 186 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1913. Published Bi-Monthly. Price per year: Paper, $8.00. Cloth, $12.00.

The Surgical Clinics begins with the exhibition of a patient with phthisis who has been subjected to injections of nitrogen gas within the pleural cavity. This leads Murphy into a history of the use of the gas for this purpose of which it seems he was the practical originator in 1898 and, after reading his classical paper upon pneumathorax in the Surgical Oration before the A. M. A., at Denver in that year, he found on returning that his office was three feet deep in mail from anxious prospective patients. He concluded that if he accepted their importunities he must forsake surgery for internal medicine and he then and there shifted the work to other hands, notably to Dr. Neff, of Spokane, who has done several hundred injections. The theory is well known and the lecture on the subject of great interest, Murphy believing that the early cases are those particularly benefited. There has been but one death in his series of several hundred cases, owing to embolism from air entering a vein at time of puncture. In this connection his advice to admit air, filtered through cotton over the base of a hyperdermatic needle introduced into the pleural cavity, in cases of hemoptysis is of great value because of its very simplicity and value in checking hemorrhage. A description of the general treatment of consumption with tubculin, and other means, in the clinic is given in detail. There are, as usual, a number of Murphy's wonderful bone operations included in this number and talks on cases of tuberculoma of the spine, cholelithiasis, undescended testicle, tuberculous abscess treated with glycerin-formalin injection, and notes from the students' clinic. Thus ends the second year of this unique publication, with index. It has more than justified its existence and is one of the most instructive and intensely interesting journals published. The strong and original personality of its author pervades every line and, next to sitting in the ampitheatre in his presence, this is the best possible substitute.

Winslow.

A Practical Treatise on Medical Diagnosis. For Students and Physicians. By John H. Musser, M. D., LL.D., late Professor of Clinical Medicine in the University of Pennsylvania. New (sixth) edition, revised by John H. Musser, Jr., B. S., M. D., Instructor in Medicine in the University of Pennsylvania. Octavo, 793 pages, with 196 engravings and 27 colored plates. Cloth, $5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

In this very compact treatise the author has collected all those methods of diagnosis, whose practical worth has been established. It is a very good book for the student and practitioner, as they will quickly find a short description of the methods, symptoms and a short reminder as to the significance of the several laboratory findings. Nevertheless the book can not well replace larger and more extensive works along the different branches of laboratory methods. Leede.

Progressive Medicine. Vol. IV. 1913. Lea & Febiger, Philadelphia and New York. Paper, $6.00 per annum.

In this volume are reviewed diseases of the digestive tract, by Goodman; diseases of the kidneys, by Bradford; genitourinary diseases, by Bonney; surgery of the extremities, shock, anesthesia, infections, fractures, dislocations, and tumors, by Bloodgood; therapeutic referendum, by Landis. It will thus be seen to be one of the most interesting and valuable numbers. Goodman compares the results of surgical and medical treatment of gastric ulcers but it would seem to the reviewer that this is an almost impossible matter. Surgeons operate on patients who have been medically "cured" many times and the result of operations depends largely on the operator, whether the ulcer is resected or whether only cases showing pyloric obstruction are operated on. The pro's and con's of a controversy over the classical signs of duodenal ulcer as given by Moynihan are reproduced, and Allard thinks the Germans miss the diagnosis of duodenal ulcer frequently because they use too exact methods—a hit at what he considers the crude method of history as a basis for diagnosis. The consensus of opinion appears to be that medical treatment is of no avail in duodenal ulcer. The frequency with which duodenal ulcers perforate without any previous symptoms of indigestion is shown by numerous recent reports. Indeed symptoms of perforation, with absence of a history of dyspepsia, should lead one to first explore the duodenum. A very instructive discussion on intestinal toxemia will be found. Time does not allow of further notice but the volume is filled with useful knowledge from start to finish. Winslow.

A Text-Book of Histology. By Frederick R. Bailey, A. M., M. D., Fourth Revised Edition. Profusely Illustrated. 644 pp. $3.50, net. William Wood & Co., New York. 1913.

The primary aim of the author in the preparation of this work has been to give the student of medicine a text-book of histology for use in connection with practical laboratory instruction. The text is concise and the essential elements are made to stand out, somewhat, from the necessarily accompanying details. This enhances its clearness. The illustrations are especially good. Taken altogether, it is a very acceptable text-book of histology. West.

Skin and Venereal Diseases. Miscellaneous Topics. Practical Medicine Series. Vol. IX, 1913. Edited by W. L. Baum, M. D., and H. N. Moyer, M. D. Year Book Publishers, Chicago.

This volume of somewhat over two hundred pages includes various short articles. That portion dealing with skin diseases occupies about one-half of the book and discusses briefly some of the common cutaneous affections, in addition to reporting a few cases of the more unusual types. Internal and external causes of these affections are superficially considered. Hints on therapeutics of dermatoses, including radiotherapy and actinotherapy, are touched on. Genitourinary medicine and surgery are dealt with in a similar manner. That portion labelled "Miscellaneous" discusses medical history, medical economics, sociology and eugenics. An attempt to embrace so much in so little space omits much that might prove of value.

Redon.

Pathology, General and Special. A manual for students and Practitioners. By John Stenhouse, M. A., B. Sc. (Edin.) M. B. (Tor.), formerly demonstrator of Pathology, University of Toronto, Toronto, Canada. Second Edition, revised and enlarged; including selected list of State Board Examination Questions, 12 mo., 278 pages, illustrated. Cloth, $1.00 net. Lea & Febiger, Publishers, Philadelphia and New York. 1913.

This is a difficult subject to include in a manual on the essentials but it is well done. It is manifestly a valuable book for students or physicians preparing for State Board examinations and, to facilitate the latter object, there are selected questions from State Board examinations throughout the book. Winslow.

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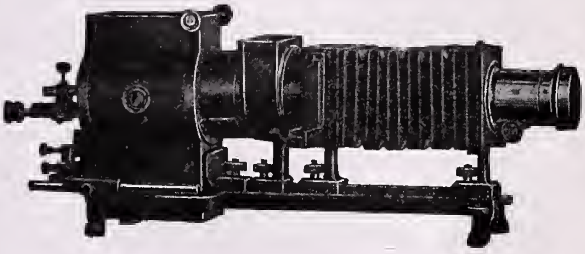

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The Pathology of Growth. Tumors. By Charles Powell White, M. D., F. R. C. S.. Director Pilkington Cancer Research Fund, Christie Hospital, Manchester, etc. Illustrated. 235 pp. $3.50, net. Paul B. Hoeber, New York, 1913.

The author has endeavored to deal with the pathology of tumors and allied subjects of hypertrophy, regeneration and the like. Throughout the volume most stress is laid on the physiologic aspects of the subject. As the author expresses it, he has endeavored to consider, not only the question what, but also the question how and why. Considerable space has been devoted to such questions as the relation between functional activity and growth, and the origin, life history, and causation of tumors. The illustrations are profuse and well adapted to the text. West.

The Principles of Practice of Medical Hydrology. Being the Science of Treatment by Waters and Baths. By R. Fortescue Fox, M. D. (Lond.); F. R. Met. Soc. Late Lecturer in Hydrology, Royal Society of Medicine. 295 pp. Price, $2.00. Oxford University Press, American Branch, 35 West 32d St., New York. 1913.

In this little book the writer endeavors to arouse the interest of the profession in the scientific use of hydrotherapeutics. The whole book shows, that the writer has made a thorough study of his favorite branch of medicine and justly recommends its use. It will give the general practitioner many valuable hints how to produce quieting, stimulating and healing effects by simple applications without the use of drugs. The result will encourage further use of this means of treatment, which is liberally used in Europe. Leede.

Golden Rules of Diagnosis and Treatment of Disease. By Henry A. Cables, B. S., M. D., Prof. of Clinical Medicine, College of Physicians and Surgeons, St. Louis, etc. Second edition; cloth; 318 pages; $2.25. 1913. C. V. Mosby Company, St. Louis.

This book is an epitome of knowledge, with suggestions for treatment of the more common disorders. The author makes use of several ideas long known to the Homeopathic fraternity but unappreciated by the regular corps, with reference to the action of drugs in small and larger doses. For example, quinin in small doses calls out the body forces in defense, but in large doses paralyzes these powers by destroying the ameboid functions of the cells. The chief criticism is the constant repetition of the word "remember" before most salient points. Its reiteration soon loses importance. The book is in readable type, concisely written and succient in detail. Crutcher.

Pediatrics and Orthopedic Surgery. Practical Medicine Series, Vol. V, 1913. Edited by Isaac A. Abh, M. D., Prof.. of Pediatrics, Northwestern Univ. Med. School, etc., and John Ridlon, M. D., Prof. of Orthopedic Surgery, Rush Med. College. 235 pages; price $1.35. Year Book Publishers, Chicago.

The section on pediatrics contains the usual high class reviews. Two of special interest are as follows: Rosenstern, of the Finkelstein Clinic, in Berlin, presents a paper on underfeeding in young breast-fed infants while on long interval feedings. This coming from the midst of the adherents of long interval feedings is significant. He attributes the condition to "drink laziness" of the child rather than any defect on the part of the breast or milk producing functions. J. L. Morse, to ascertain the effect of pasteurization of milk on nutrition, wrote to the members of the American Pediatric Society and received fifty replies. From these letters he concludes that our knowledge of the whole matter is extremely incomplete and unsatisfactory. Much more careful and extensive study, both in the laboratory and clinically must be done than heretofore to determine the effects of pasteurization on nutrition. Manning.

Practical Prescribing, With Clinical Notes. By Arthur H. Pritchard, M. R. C. S., L. R. C. P., R. N. Late House Physician Brompton Hospital, and Resident Surgeon R. N. Hospital, Gosport. Cloth, 308 pp., $2.00. Oxford University Press, 35 W. 32nd St., New York.

This is a rather novel method of teaching therapeutics. There is a list of the more common diseases and under each disease one or more cases with clinical notes are given and then the treatment and progress of the patient is detailed. Remedies are prescribed in the form of elaborate prescriptions which are much more complicated and numerous than we are apt to order. The various other remedial measures are also described, with comments on the indications and changes which should be made as the phases of the disease change for the better or worse. It is a sort of moving picture show of the treatment of disease. One is interested in the very English treatment which varies somewhat from ours. The whole is rather well done, if the doctor has a strong fancy for 6-ingredient prescriptions. Winslow.

Clinical Diagnosis and Urinalysis. By James R. Arneill, A. B., M. D., Professor of Medicine and Clinical Medicine in the University of Colorado, and Physician to the Denver County Hospital and the St. Joseph and St. Luke's Hospitals of Denver. New (2d) edition, revised and enlarged. 12 mo., 270 pages, with 83 engravings and a colored plate. Cloth, $1.00, net. The Medical Epitome Series. Lea & Febiger, publishers, Philadelphia and New York. 1914.

This little work describes laboratory methods for examination of blood (including serum reactions and diagnosis), gastric contents, feces, sputum, joint and cerebrospinal fluids, milk and urine. It is brought well up-to-date and supplies an accurate and economical guide which is of more service to the general practitioner than some other epitomes.

The Practitioners Practical Prescriber. An Epitome of Symptomatic Treatment. By D. M. Macdonald, M. D., Medical Officer of Health, Leven, Fife. Cloth, pp. 198, $1.50. Oxford University Press, 35 W. 32nd St., N. Y.

Another book which resembles closely our little pocket formularies with diseases arranged alphabetically and brief treatment following. This book also has a strong English flavor. One may have the choice of sending phthisical patients, for instance, to Davos, St. Moritz, and Egypt, at Halousan, Assouan and Luxor. While we find Manitou, Colorado Springs and Denver advised for American resorts. Preparations are according to B. P.

Essentials of Prescription Writing. By Cary Eggleston, M. D. Instructor in Pharmacology, Cornell University Medical College, New York City. 32 mo. of 115 pages. W. B. Saunders Company, Philadelphia and London 1913. Cloth, $1.00 net.

The present book is a clear and concise exposition of a forgotten subject, in the case of most practitioners, but which looms larger in the mind of the medical student—but more particularly in that of his materia medica instructor.

Obstetrics. A Manual for Students and Practitioners. By W. P. Manton, M. D., Professor of Obstetrics and Clinical Gynecology, Detroit College of Medicine, Detroit, Mich. Second edition, revised and enlarged; including selected list of State Board Examination Questions. 12 mo. 292 pages, with 97 engravings. Cloth, $1.00, net. Lea & Febiger, Publishers, Philadelphia and New York. 1913.

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ORIGINAL CONTRIBUTIONS.

THE INSANE IN WASHINGTON TERRITORY.*

By Mr. Thomas W. Prosch,
SEATTLE, WASH.

Insanity in the state of Washington dates back to the coming of the first white men, more than a century ago. In the first years of the last century, an American fur trader, named Henry, was operating in the region of the Rocky Mountains. In 1808 one of his houses was attacked by Indians who killed all the men connected therewith but one. This one escaped unperceived. In a destitute condition he wandered about for several weeks, suffering greatly. The massacre of his companions, added to his later troubles, affected his mind, the disorder, however, being of harmless character. While in this condition he fell in with other Indians, in the Snake River country, who took him into their care.

All over the continent the Indians regarded deranged persons with superstitious awe and would help and not harm them. Fennimore Cooper and other writers made record of this fact on the Atlantic seaboard long ago. So it was with these Indians and this unfortunate young man. They seemed to think that he was nearer to God than they; that God had specially visited him, and that they must be gentle and good to him. For three years they housed, fed and clothed him, giving him treatment as good as that they themselves enjoyed.

In 1810 John Jacob Astor, of New York, as the head of the Pacific Fur Company, sent in two parts an expedition to the Columbia River. One part came on the ship "Tonquin" and, arriving first, established itself at the mouth of the river, at the place since called Astoria, in honor of the patron, the New York merchant. The other part left St. Louis in August, 1810, and spent the following winter on the upper Missouri River. In 1811 they resumed their journey. They separated into two divisions, one headed by Wilson P. Hunt, the other by Donald McKenzie. The latter came upon the Indians who had the demented young white man. At times he had a mind wholly or partially clear and then he was able to tell his story. He was Archibald Pelton, from Connecticut. McKenzie took charge of him. The party had terrible experiences in completing their journey, but they finally arrived at Astoria on the 18th of January, 1812. These men of the Pacific Fur Company, and other men of the Northwest Fur Company who also came in 1811, were the first white people to make permanent settlement in Oregon and Washington.

The Indians on the Lower Columbia took notice of all the white men near and among them, and they were particularly impressed with Pelton. They heard him called by name, and they thought that the word indicated his mental condition. Having no word of their own of satisfactory character, they adopted the name of the unfortunate white man. He was "pelton"—insane or foolish. Another person, an Indian similarly affected, was "Kahkwa pelton," at first like Pelton, but later like one of disordered mind; "pelton Klootchman" was a foolish woman.

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*Read before King County Medical Society, Seattle, Wash., Nov. 17, 1913.

Other Coast Indians also adopted it. It was incorporated in the Chinook jargon, and it appears in every Chinook dictionary as the word signifying the various forms of mental affliction.

From that time on there were other cases of insanity in this state and in Oregon, a constantly increasing number that finally made public action necessary. About the end of 1854 or beginning of 1855 occurred the first of these cases in or near Seattle. Edward Moore, a sailor, was found on the beach a few miles north of town. He had been there for some days, living on raw mussels, and getting some assistance from Indians. It being winter and cold, he had been partially frozen; his wet feet suffered most. He was brought to town. When the cloth wrappings were taken off his feet it was found that the toes were dead. In lieu of surgical implements, a sharp ax was used to cut them off. The hotel keepers of the day—David Maurer and S. B. Simons—kept him for several weeks, while Dr. Williamson did what he could for him in the hope of restoring him to a condition of mental health. All efforts failed to accomplish more than continue his life. An arrangement was finally made with Dr. M. P. Burns, of Steilacoom, to take him, the doctor and the people of King County to unite in a later effort to get the money to pay for his care from the Legislature of Washington Territory.

When the Legislature convened, in December of 1855, it received a communication from the commissioners of King County, in which the Territory was asked to pay the bills incurred in keeping and caring for this "non-resident lunatic pauper." It was referred to the Committee on Claims of the House of Representatives, which after a few days reported as follows:

Mr. Speaker: The Committee on Claims, to whom was referred a communication from C. C. Lewis, Thomas Mercer and Alfred Savage, County Commissioners of King County, Washington Territory, to Messrs. Phillips, Strickler and others, members of the Council and House of Representatives from said county, calling their attention to the enactment of a special law for the relief of said county, for expenses and maintenance of a lunatic pauper named Edward Moore, by whom it was laid before the House, and referred to your committee, have had the same under consideration, and beg leave to report:

1st. That so far as we have been able to ascertain the said pauper was picked up by some person about twelve months ago on the beach below Seattle, in a state of lunacy and helplessness, being so badly frost bitten that the amputation of nearly all his toes was found to be necessary.

2nd. That at that time it was not known that he was a citizen of King County, nor, so far as we are able to learn, was he ever a resident of Washington Territory.

3rd. That we are told by Dr. Burns, of Pierce County, that from all he can learn from said pauper he came from Worcester county, in the state of Massachusetts, and that he has a wife and children in the States.

4th. That he was kept under medical treatment at Seattle, in King county, for four months, partly sustained by voluntary contributions, when he was conveyed by some persons (whose names are unknown to us) to Steilacoom, in Pierce county, where he was placed under the medical treatment of Dr. M. P. Burns, by whom your committee is informed that it has been necessary to keep said pauper confined hand and foot, in order to keep him from certain habits into which he has fallen and supposed to be the original cause of his present deplorable condition.

5th. That your committee is of the opinion that, although this case is one that should touch all the finer feelings of our nature, yet, upon mature consideration, it is believed to be impolitic for this Legislature at this early date of our territorial existence, as well as under the present aspect of affairs, to pass a law for the relief of those interested, because it would be setting a precedent that would, if carried out, bring a heavy burden of taxation on the people of the Territory.

6th. That your committee is of the opinion that the sixth section of the law, as found on page 396, of the Statutes of this Territory, relating to the support of the poor, is sufficient to govern in all such cases without further enactment on the subject.

7th. That your committee will here give the bill of charges as laid before them for the information of the House, in case they should differ in opinion with your committee in the disposition of the same as here recommended, to-wit:

For medical attendance by Dr. Williamson	$288.00	
For nursing, etc., by David Maurer	283.00	
For boarding with Simons	50.00	
		$ 621.00
To Dr. Burns for medical attendance	$475.00	
To Dr. Burns for board and lodging	285.00	
To Dr. Burns for attendance of a man	255.00	
To Dr. Burns for cash paid for clothing	23.00	
		$1,038.00
Making in the aggregate		$1,659.00

8th. That your committee is of the opinion that the County Commissioners of King and Pierce counties should at their earliest convenience take some action in the premises.

WM. M. MORROW, Chairman.

As far as the Legislature and the Territory were concerned, the committee report ended the matter. The Legislature did this, however. It adopted the following preamble and resolution before ending the session:

WHEREAS, the commercial, lumbering and shipping interests of Washington Territory demand and necessarily require the service of a large number of seamen, among whom there are many cases of sickness and destitution, which are and have been a charge to the counties bordering on the navigable waters of the Territory, and

WHEREAS, this country, at present, is wholly unable to provide for such cases, therefore,

RESOLVED by the Legislative Assembly of the Territory of Washington, that our delegate in Congress be, and he is hereby instructed to exert his influence with Congress to procure an appropriation for the erection and maintenance of a marine hospital, a portion of which is to be set apart as an asylum for the insane, at some suitable point on Puget Sound.

Passed January 5, 1856.

A. A. Denny,
Speaker of the House of Representatives.
Seth Catlin,
President of the Council.

This resolution, apparently, had effect, for provision was soon made for a marine hospital, in which seamen, sick from any cause, were cared for at Port Townsend. About fifteen years after the foregoing recited event, Congress also appropriated twenty thousand dollars to assist the Territory in caring for its insane, and still later gave both land and buildings at Fort Steilacoom.

As soon as Dr. Burns learned of the action of the Legislature he put the insane sailor on a boat and sent him back to Seattle. The people here, then, had to care for him again. They arranged with the captain of a sailship to take him to San Francisco and from there to provide for his return to Boston. Before starting, Moore was cleaned up, and dressed in a suit of new garments from stockings up. What became of him is unknown, whether he was left in California by the shipmaster, or sent on to Massachusetts as agreed.

How serious this affair was, from a money standpoint, may be inferred from the fact that the entire income of the Territory during the year was $1,199.88, or $459 less than the expenses connected with this one case. It cost the people of King county more than $800, or an average of $4 apiece for every man, woman and child in the community. A similar per capita charge today among the 350,000 inhabitants of King county would be $1,400,000, and would be little or no more onerous than was the burden thrust upon the few people here in 1855-56 in the case of Edward Moore, the first so-called "lunatic pauper."

For seven years thereafter there was no public care of the insane in the Territory of Washington. If they had no friends or relatives they were allowed to come and go as they wished, and get along as best they could. I was acquainted with several demented individuals during that period. One of them was a stranger to everybody. He lived in the vicinity of Steilacoom—how, no one knew, or tried to know. Every few months he would come into town with a pack on his back containing, it was supposed, all his personal possessions. He would stop at short intervals, and, looking up at the sun, would in loud tones make a speech in a language no one understood. After a few years he disappeared.

If only slightly deranged these people stayed and got along reasonably well. Sometimes they were shunned and sometimes not. In some cases they were taken to California, which had an asylum at Stockton. The same conditions prevailed in Oregon as here until two Portland physicians—Hawthorne and Loryea—established a private sanitarium, after which some of our people received care there.

The Legislature of 1862 took definite action looking to a proper and more humane course in connection with those belonging to this unfortunate class of people. In accordance with this action Governor Pickering and Auditor Walker solicited propositions from those willing to undertake the task of keeping and caring for the insane of the Territory. Hawthorne and Loryea offered to do so for $12 a week for each patient, at their establishment in Portland; Dr. Henry A. Smith offered to do so in Seattle for $9 a week, and the Sisters of Charity, at Vancouver, for $8 a week. Contract was made with the Sisters for the period of three years. The Dr. Smith referred to lives yet in Seattle, to which he came in 1852, and of which he is one of the two adults of that period yet surviving. Smith's Cove, which his land fronted, was named after him.

Under the new arrangement the amount paid the Sisters the first year was $2,600. There was soon financial disagreement. Payments were made in paper money, which was not worth its face, and for many years was from 20 to 50 per cent. below par. The Sisters claimed gold coin. Payments were deferred, and they demanded interest. Final settlement was delayed several years.

In 1866 a new contract was made with James Huntington and W. W. Hays, of Monticello, in Cowlitz county. They were to get a dollar a day for each idiotic or insane patient, in paper money, and were to furnish land, house, board, clothing, medical treatment—everything. Eleven patients were received from the former keepers and during the year one other, a new patient. Five of the twelve were men and seven women. The contracting firm later became Huntington & Son. Their contract expired in 1871.

By the abandonment of Fort Steilacoom by the military in 1868, a mile square of land and houses sufficient for three hundred soldiers, were unused. Delegate Flanders at once introduced a bill in Congress to give the property to Washington Territory for an asylum for the insane. It did not then pass. In 1869, as Governor, he urged the Legislature to renew and further the idea, compliance being made by that body. In the meantime the War Department ordered the buildings sold and they were sold January 15, 1870, a commission appointed by the Legislature buying them for $850—houses that cost $200,000 in 1858. Subsequently Congress gave the land to the Territory.

In August of 1871 the patients were transferred from Monticello to the new place, and their care left with another contractor, Hill Harmon, who had their feeding, clothing and like necessaries to supply for five years. The Territory furnished the place and buildings and, in addition, the physician, Dr. Stacy Hemenway. The patients in the beginning at Fort Steilacoom numbered twenty-one. The number has since gone up in the state into the thousands, increasing out of all proportion to the whole population. Upon the retirement of contractor Harmon, the Territory assumed, through its regular salaried agents, all the care and expense connected with these unfortunates among our people.

SOME PHASES OF CHRONIC MEMBRANOUS PERICOLITIS.*

By N. W. Jones, M. D.,

PORTLAND, ORE.

The writer desires in this report to emphasize briefly four important points pertaining to our present day understanding of this much discussed, but illy defined subject of chronic membranous pericolitis, to-wit: First, the condition as a group entity exists far more frequently and gives rise to obscure local and general symptoms more often than is at present supposed; second, its presence lends itself to clinical recognition in the majority of cases; third, its pathogenesis is still unsolved, and fourth, its treatment, mainly because of the third factor, is also in a measure an unsolved problem.

Frequency. In 927 cases of abdominal disorders examined in detail since January 1, 1912, there were recognized clinically forty cases of pericolitis. In this numer an uncompleted right-sided pericolitis was found twenty-eight times. In seven instances it was associated with probable Lane's kink and ileum stasis. In four it was associated with mobile cecum and atypical pericolitic bands were found in one case.

In the study of gastrointestinal diseases, the writer has been in the habit of dividing for practical purposes the cases into three groups: disturbances in the chemistry of digestion, mechanical disturbances and local lesions, such as ulcer, gallbladder disease, appendical disease, etc. It is of interest to note that in nearly every instance, where clinical examination has failed to prove the presence of either the first or the third group, x-ray examination has definitely shown the presence of some form of mechanical interference with the gastrointestinal tract. A true spastic type of constipation alone is the only exception.

Clinical Recognition. Uncomplicated chronic pericolitis presents a symptom-complex which usually will direct one's attention to the existence of this condition before x-ray examinations are made. The patient complains of local symptoms which are more than suggestive. There is periodic right sided pain and soreness, and a sense of swelling, pulling and drawing, associated with an accumulation of gas on the same side, and oftentimes a sense of blocking which may be relieved by the use of heat and massage with a sensation of gurgling. On palpation the tender cecum and ascending colon are felt as a distinct mass which varies in size from day to day. (Figs. 1 and 2.)

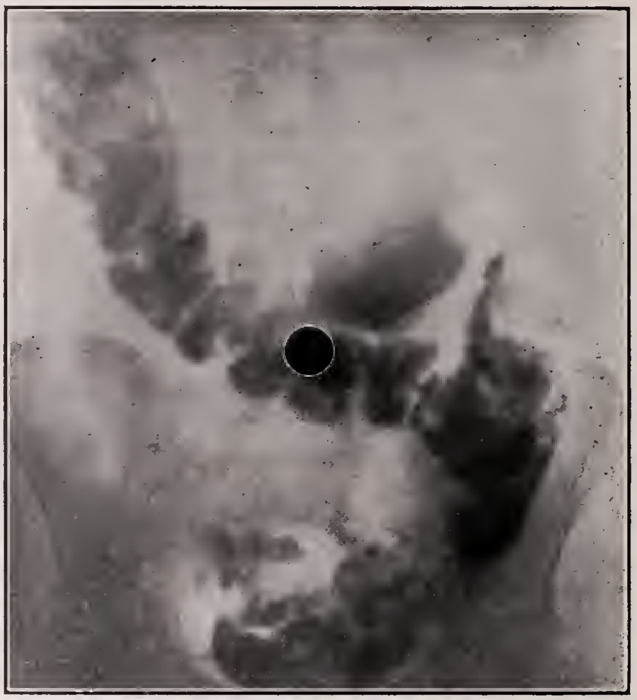

Fig. 1. Extreme right sided pericolitis with local blocking. Twice operated without recognition of cause and without result. Extreme asthenia. Medical end result good.

The same reflex and secondary symptoms are met with in pericolitis as in other forms of local colon stasis. Those referable to the stomach are, in the main, periodic sourness, bloating, belching, nausea, vomiting and loss of appetite. A secondary colitis, which is frequently of a mucous-colitis type, and a Schmidt fermentation dyspepsia, which must be looked upon as a reflex pancreatic disturbance, has been noted in several instances. The general symptoms are likewise the same as those of other forms of colon stasis, namly, those referable to the intestinal stasis itself, as weakness, cold hands and feet, sallowness, periodic mental torpidity, and toxic heart action with accentuation of the second heart tones but with low blood pressure, rheumatic-like pain and a toxic arthritis. Those symptoms referable, also, to a disturbance of the autonomic nervous system, as in general asthenia, may exist, as may likewise a true secondary neurasthenia whose origin can be traced to a given period of time.

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*Read before the Thirty-ninth Annual Meeting of the Oregon State Medical Association, Medford, Ore., Sept. 18-19, 1913.

The grouping of these symptoms vary in different cases, but usually the predominating symptoms go hand in hand with the degree of blocking and the presence or absence of stercoral intoxication, or the encroachment of the pericolic membrane onto, especially, the stomach and duodenum.

The diagnosis in our experience can usually be definitely made by a rather characteristic picture seen by x-ray. There is a peculiar matting of the cecum and ascending colon with the descending limb of the transverse colon. This remains fixed at all times and through any abdominal manipulations that may be made. Usually the hepatic angle is obliterated, and at times the cecum is pulled up higher than its normal position. There is, as a rule, definite stasis at the point of matting, but in a few instances actual hypermotility of the bowel has been seen. (Fig. 3.)

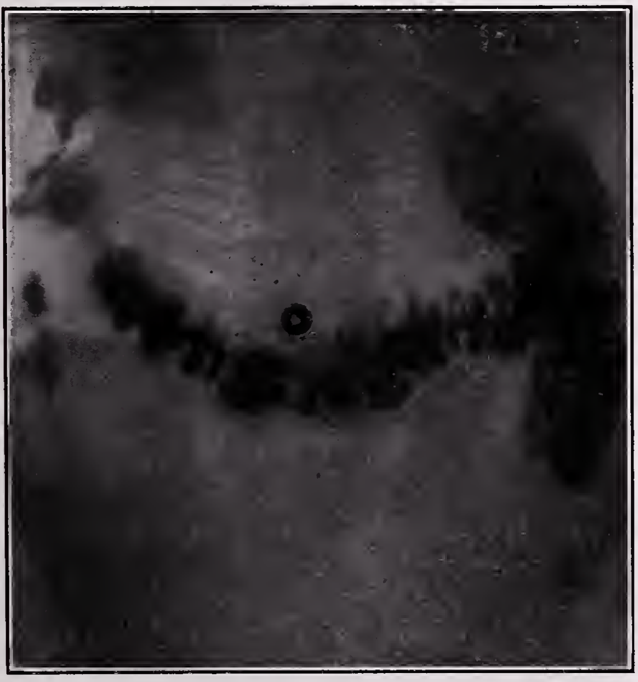

Fig. 2. Extreme right sided pericolitis with local blocking. Medical end result failure. Not yet treated surgically. Compare with No. 1.

Pathogenesis. The different theories of the formation of pericolic membranes, about which there is so much discussion today, are essentially congenital in character on the one hand and acquired on the other. These membranes occur frequently in fetal life, whether they be peritoneal foldings placed for the purpose of support, or the accidental remains of prenatal adhesions. In the adult, too, the type designated as Jackson's membrane seems to correspond closely in certain instances to the parietocolic fold of Janesco, and the bloodless fold of Treves and the genitomesenteric fold of Reid are duplicated very closely in those peritoneal bands which Lane first described as being the cause of the kinking of the ileum, close to its junction point with the large bowel.

The histology of these folds is for the most part the histology of peritoneal folds elsewhere. In the case of the Jackson membrane, however, Hall has described in detail an apparently non-inflammatory pseudo-membrane covering the right colon, which he assumed to be toxic in origin, produced by the passage of toxins through the bowel wall without there being an associated colitis present. In a fairly comprehensive review of the literature the writer has not found any mention of a true inflammatory type of pericolic membrane. This from the first seemed strange to him for the reason that from a purely clinical standpoint a fair percentage of his cases had a history of a typhoid infection or a chronic dysentery immediately antedating the appearance of the chronic abdominal symptoms.

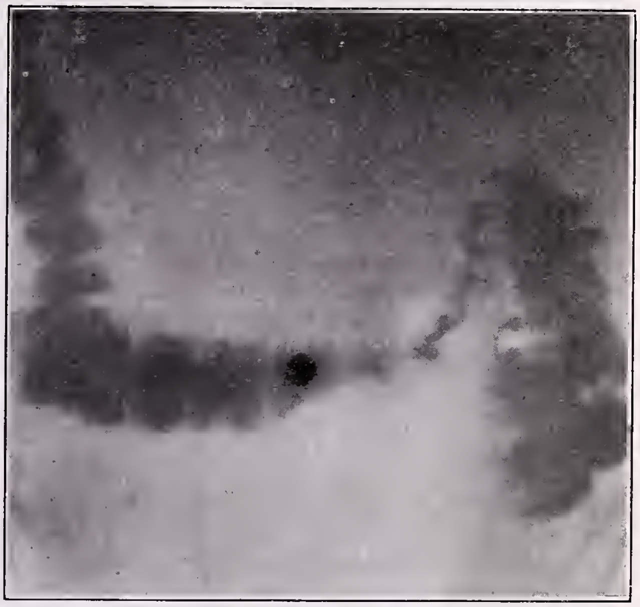

Fig. 3. Right sided pancreatitis with local blocking. Operated for chronic appendicitis and a year later for adhesions without result. Moderate asthenia. Medical end result good.

In March, 1913, there came fortunately to autopsy from the writer's service in the Multnomah County Hospital, a case which proved to be, according to Dr. Roberg, of the Department of Pathology of the University of Oregon, a true inflammatory pericolic membrane. The patient, a man seemingly sixty years of age, was entered in the hospital in a semicomatose state and died soon after without a clinical diagnosis being made. No history was obtained and the only physical findings of note were a cardiorenal disease of moderate degree and black, tarry stools which were composed largely of blood. Autopsy performed six hours after death revealed no cause for death except the gastrointestinal hemorrhage, the origin of which could not be found. The brain and cord were examined also. Extending over the right colon, however, was a milky-like, semitransparent membrane which passed from below on the inner side outward and upward in a broad spiral, encasing and matting the bowel and fastening it to the parietes on the right. The tip of the cecum was not encased but protruded like a little balloon, being filled with gas. The appendix was adhered to the bowel but appeared normal. The first limb of the transverse colon was adhered to the ascending bowel in a double-barrelled manner, and the membrane extended partly onto the duodenum and the right end of the stomach. Dr. Roberg's report is as follows:

"The serosa of the bowel is covered by a thin transparent membrane which is not vascular to the naked eye. Small isolated regions of this membrane contain small amounts of clear fluid. On laying the bowel open the mucosa is found covered with a thick, tarry-colored, tenacious substance, which also fills and distends the lumen of the appendix. This blood-stained substance when removed reveals a highly congested mucosa. Ulcerations and abrasions are absent. Microscopically the mucosa is thinner than normal and the cuticular border shows the absence of crypts. For the most part the Lieberkühn glands have been replaced by connective tissue. When they persist they occur with cystic or dilated lumina. The submucosa is replaced by dense connective tissue and its blood vessels are engorged. The muscular layers are somewhat infiltrated with connective tissue cells. The serosa is thickened and sends out septa of varying thickness. The serosa, the septa and the enclosed adipose tissue are quite deeply infiltrated with fibroblasts. In addition to this there are newly formed blood vessels. In the bowel, therefore, there is a chronic inflammation of the mucosa which has extended to the adventitia and resulted in the formation of a vascularized trabeculated membrane."

These findings add, consequently, to the variety of pericolic membranes already described one that is definitely inflammatory in origin. The history of the case is entirely wanting and likewise the bacteriology of the bowel. No direct relationship could be determined between it and the gastrointestinal bleeding which seemingly caused death. There were no varicose veins present, as frequently exist in the stomach when kinking of the duodenum at the junction of its first and second portions is present. Of greatest interest will be the determining of the bacteriology of at least this type of membrane. There is a bacteriologic origin no doubt. It may be found that the anaerobic intestinal flora under proper conditions play an important part in the formation of these membranes.

From a clinical standpoint it is interesting to note the different etiologic factors of the 40 cases herein reported. It is of importance also that in the eight cases where there was a history of typhoid present, and in nine cases with a history of some form of dysentery, the abdominal symptoms of blocking began in the majority of instances in a comparatively short period of time after the affection. This surely points in a measure to an acquired etiology in these particular cases.

In the table following the etiologic factors are classified without regard to the cases. In some two, or even three factors coexist.

Absent	20	times
Typhoid	8	"
Chronic dysentery (early history)	6	"
Connective tissue lientery (late history)	3	"
With mobile cecum	5	"
With Lane's kink	6	"
With atypical pericolic bands	1	"
Pneumonia	2	"
Mumps	1	"
Pelvic disease	1	"
Appendicitis (intercurrent)	1	"
Gallbladder disease	0	"

Treatment. The basic principles underlying the treatment of the disease have to do with the relief of the stasis, of the reflex symptoms and the support of the autonomic nervous system. The first principle is purely mechanical in nature, whether the stasis be relieved by medical or by surgical measures.

This is well shown by a case of a 26-year-old married woman, who for three years suffered from severe constipation, reflex vomiting and occipital headaches with general loss of strength and weight. Carefully conducted medical measures failed to give relief. At operation the pericolic membrane, covering the right colon, half of the transverse colon and extending on to the stomach, was largely removed and the stomach freed from it. The patient was not under proper control and was not fattened during convalescence, so that the end-result for eight months thereafter was, from the patient's standpoint, a failure. She became pregnant at this time with the result that the increasing intraabdominal pressure has relieved for the time being nearly all symptoms. For permanent relief she will have to have from twenty to forty pounds of fat added to her present weight.

The end-results of the forty cases herein noted are of sufficient interest to justify brief tabulation. They are as follows: (1) Not treated—result the same—eight cases. Pericolitis four; pericolitis with Lane's kink, three; pericolitis with mobile cecum, one. (2)

Medically treated, twenty-nine cases. Uncomplicated pericolitis, twenty-two cases; relieved eighteen (81.8 per cent.), unrelieved four (18.2 per cent.); with kink, five cases, relieved two (40 per cent.), unrelieved three (60 per cent.); with mobile cecum, three cases; relieved two (66 2-3 per cent.), unrelieved one (33 1-3 per cent.) (3) Surgically treated, eight cases. Uncomplicated pericolitis five cases; relieved one (20 per cent.), unrelieved two (40 per cent), dead one (20 per cent.), result pending one (20 per cent.) With kink three cases; relieved three, unrelieved none. With mobile cecum, relieved none, unrelieved none. (4) Total cases relieved medically twenty-two (75.8 per cent.). Total cases relieved surgically four (50 per cent.). Mistaken surgical diagnoses (no relief) occurred fifteen times in the forty cases, to-wit: chronic appendicitis ten times, pelvic disease four times, adhesions once.

From a perusal of these results it is safe to say that 75 to 80 per cent. of the cases can be well handled by medical measures. The details of carrying out the three basic principles of treatment enumerated above are the same as for the relief of chronic stercoral stasis due to any cause, and the asthenic state, if the latter be present. It is unnecessary to repeat these details, for they have been described at length in other papers.

The surgically treated cases, excepting where a Lane's kink was the chief factor—in which cure is the rule—gave unfortunate end-results. The writer is satisfied, however, that this poor showing is the result of the average surgeon's failure to understand the condition he is dealing with. The fact is, no one yet does clearly understand the condition. But because some surgeons, as Jackson, are reporting a fair percentage of cures, it is safe to predict that uniformly good results will be obtained in the near future in those cases which demand surgical interference.

Several questions naturally arise in the estimation of the prognosis of these cases. First, if these membranes are fetal remains, then the process should not be progressive unless the distal kinking is sufficient to progressively dilate and render atonic the proximal end of the colon. Then the relief of blocking by medical measures should be as permanent as any surgical measure could be. Second, if the morbid process is inflammatory in character and progressive, then medical measures can be expected to give only temporary results and all of the cases will ultimately be treated surgically when the latter methods are perfected. Third, if, as will probably prove to be the case, the pathogenesis of the process is found to be variable, some forms progressive and other forms non-progressive in character, then the ultimate treatment must be individualized from the medical standpoint, and only those cases handled surgically in which the more conservative methods have failed to relieve.

The writer has formed but one rule in the handling of these patients, to-wit: every patient, who suffers from a chronic pericolitis of such a degree that he is unable to obtain results at home under guidance, must be placed in bed under rigid control for a period of two weeks to determine whether or not the condition can be relieved. If not, it becomes a surgical case and should be so considered from that time on.

The question of surgical treatment is left to our surgical confreres. It concerns simply surgical technic, for the basic principles are the same whether conducted in a medical or a surgical manner. The writer is told that Lane, of London, prefers to do colectomy in these cases. It is only to be hoped that Jackson and others will determine that simpler, less grave and, in our way of thinking, more scientific methods will solve the problem of the treatment of these severe forms of the disease.

PERFORATING DUODENAL ULCER WITH REFERENCE TO PAIN IN LEFT SHOULDER AS A SYMPTOM.*

By A. A. Matthews, M. D.,

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Recently there has been much written in the magazines regarding this condition. Formerly it referred to gastric ulcer but of late the lime light has been directed to the duodenum. One thing has impressed me very forcibly in four of the cases which I am reporting and of which I have not seen reference in any literature at my command. It is a pain referred to the left shoulder; not in the upper left side or the back, or upper chest which is often seen in ulcers on posterior surface of stomach and other conditions, but in the shoulder proper. In cases 3, 4, 5 and 6, as you will note by the histories, this was a prominent symptom, especially in case four, whose chief pain seemed to be centered there and the first thing he complained to me about when I saw him was the pain in his left shoulder.

I think this symptom is present very often but our attention is centered on the belly and we simply accept it as a referred pain to the chest, which is common in upper-belly conditions, and have not suspected or inquired in regard to it. It would hardly be a coincidence to find this symptom in four successive cases, such has occurred in my small series.

I will briefly review the subject of perforating duodenal ulcer before going into the histories. These perforations often escape recognition and are mistaken for other lesions, consequently result in the delay of proper treatment and often terminate fatally, notwithstanding the advances and progress that have been made in abdominal diagnosis of today. Practically one can always elicit a history of previous gastric disturbance, varying in intensity from severe symptoms to mild dyspeptic disorders. Instances are few where there have been no premonitory symptoms, and the perforation has occurred without the slightest warning.

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The objective symptoms are most important, as the character of the respiratory movement, the preponderance of thoracic over abdominal breathing. The muscular rigidity is always constant and a most valuable objective sign. The belly at first is not distended but retracted, the muscles tense, never relaxing for one moment, which is not so marked in other pathologic lesions, excluding possibly gastric perforation.

When these perforations occur the pain is of the most severe lancinating character and borne with great difficulty by the individual. If standing, reaching up or moving about the individual will often drop as though shot, in agonizing pain which is aggravated by motion and even by breathing. So severe has it been that Moynihan reported one case of death due to the violent onset of the pain. The patient is usually prostrated, pale and faint, his eyes set with an expression of terror. The pain is usually epigastric at first but may vary later, according to the location of the exudate and spread of the peritonitis.

Vomiting is possibly the next most common symptom, being present in about two-thirds of all cases. This becomes more prominent as the peritonitis advances. I do not regard this symptom of any special diagnostic value, for practically in all acute abdominal conditions we have vomiting if the stomach contains anything. Blood in the vomit in any quantity is a rarity.

Shock is a most overrated symptom. If present it is not of much duration and should not be a contraindication to operation. Van Hook and Kanaval, in Keen's Surgery, say it is always well to let the initial shock pass by and allow the patient to gain some strength before opening the abdomen; they further state that in a short while this usually passes away. I think this a mistake for, as soon as the diagnosis is made, the operation should be performed and it cannot be done too soon, even though there is a question as to the exact diagnosis. If a perforation be suspected the work should begin at once.

The disappearance of liver dullness is considered by many an unreliable symptom and, if present, is a late one. I think too much stress is placed upon dullness in the flanks, it being rather uncertain, unless considerable time has elapsed for fluid to collect and it does not help us a great deal in making a differential diagnosis. Dr. Elliott claims he can by auscultation elicit a very small quantity of fluid located in these regions and regards this symptom with considerable importance.

I will not go into detail as to differential diagnosis. The most common error is to confound the trouble with acute appendicitis and this mistake was made in two of the cases I am reporting. There is no grave mistake in this error for, if there be a question in the mind of the operator, he most certainly should lean toward the appendix and make a McBurney incision and then, if finding the appendix not involved, it serves as a very adequate drainage by passing a tube into the cul-de-sac. If there be considerable infection, it is well to put in a drainage under the kidneys.

As to the treatment of these ulcers there seems to be much controversy, some claiming to excise and then suture to be the proper procedure. I believe most authors are inclined to simply suture and fortify, if necessary, the area with a piece of omentum. In the cases which I am reporting this was done and no attempt made to excise the ulcer. I do not consider this practical unless located on the anterior surface, and then unnecessary. When located posteriorly or far around from the front, it would be a much more formidable operation and increase the danger.

There have been a number of cases reported of death following some time after the operation, where the suture alone was used and in all these cases the result was as perfect as could be expected. In one case, reported by Marnoch, nine weeks after the operation, at the autopsy no trace of the ulcer was found.

A much mooted question among many operators is as to the advisability of doing a gastroenterostomy at the time the perforation is sutured. There are very good arguments for and against. I believe each case should be an example within itself, as well as the ability of the operator to be considered. Dr. Deaver is an ardent supporter of this procedure. For a man with his ability and experience this would often be advisable, while in other hands, the same condition existing, it would be unwise.

In none of the cases which I am reporting was this procedure advisable, except possibly case 2. In the early cases seen a short while after perforation, there being no contraindication, I believe I would do a gastroenterostomy, but these will be selected cases. Dr. Deaver further reports that, in cultures taken from the peritoneal fluid of twenty cases, only six showed any growth and he believes the irritation is a chemical rather than a bacterial one at first.

The question of drainage is very important. If the McBurney incision has been made it will act admirably for a drainage tube to pass down into the pelvis. The patient should be kept in the extreme Fowler position, so that the subphrenic spaces will drain, it being more difficult to drain these areas than any other part of the peritoneal cavity, on account of their being practically surrounded by bony frame work. It has been advised to make counter-openings through the lower, posterior pleural space. I do not consider this justifiable at first, but, if necessary, may be resorted to later if the extreme Fowler position does not suffice. It was necessary for me to do so in case 5. A suprapubic stab wound, with a split-drainage tube in the pelvis, will suffice and is more satisfactory than any other form of drainage material.

The routine after-treatment has been extreme Fowler position, pelvic drainage, preferably a split tube which is gradually shortened about an inch a day, beginning about 36-48 hours after the operation, never removing the tube but simply drawing up and cutting off each day, using a safety pin in tube to keep from losing same in wound; continuous proctoclysis, usually the Murphy method or some modification.

I prefer warm tap-water to the saline. Until about eighteen months ago I always used the saline but after reading and seeing splendid results in nephritic cases by the salt free diet, and knowing that any amount above 2½ to 3 grams was an excess in twenty-four hours, I thought that throwing in great quantities of normal salt solution was a tax on the kidneys. I wonder sometimes if we have not hurried suppression cases over the great divide or possibly been in a mild way partially responsible for the result. We can never drink salt water; why should we be forced to do so without tasting? Absolutely nothing by mouth, the free use of the stomach tube every three to four hours if there be persistent vomiting or a tendency of gastric dilatation.

I never give water by mouth until the patient has gone at least twelve hours without vomiting and preferably until he has begun to pass gas by rectum. After a bowel movement, give beef tea, broth or egg albumen in small quantities every two hours and gradually increase; then put them on slops.

The bowels should only be moved by enema, never giving medicine by mouth. For the following six months follow a rigid diet, eating nothing except that which has been put through a small seive. This, I believe, will insure them a cure even though the gastroenterostomy was not done at the time of the primary operation.

Another thing that cannot be too strongly emphasized is to avoid the use of morphin until one is satisfied as to the diagnosis and what procedure is to be taken.

SUMMARY.

(1) Diagnosis is made upon (a) personal history which is always most important, especially the gastric history; (b) onset of violent, uncontrollable pain, first epigastric, later referred to chest and general abdomen; (c) muscular rigidity of abdomen, retracted at first and board-like, later distended and tense, respiration limited to upper chest.

(2) Treatment only surgical, suturing the perforation and drainage, gastroenterostomy in select cases.

(3) Pelvic drainage, Fowler position extreme, and continuous proctoclysis.

Case 1, Sept. 18, 1908.—C. H., age 26, occupation miner. Family and past history negative, except had noticed a little gastric disturbance in his right side high up when he ate in excess, but this was never so severe as to make him restrict his diet in any manner. The discomfort was so slight that he considered it of no moment. While coming from the mine he was taken with a severe abdominal pain in his upper abdomen and vomited.

Examination revealed temperature 99½°, pulse 100. The abdomen was retracted, board-like and extremely sensitive, most of his tenderness being in his right side, extending from the costal border well down toward the pelvis, which made it suspicious of some appendicular trouble. He was operated upon a few hours after the perforation had happened.

An incision was made over the appendix region, the belly was found full of yellow fluid and the appendix not to be the cause of the trouble, although the same was removed. An opening was then made through the right rectus muscle high up. A small perforation was found in the pylorus about an inch from the stomach which was sutured with two rows of chromic catgut. Drainage was inserted in the pelvis through the appendicular incision.

Patient made an uneventful recovery and was last seen about six months after the operation, having been perfectly well.

Case 2.—A man of 38 years, a teamster, powerfully built and muscular. Family and past history of no value.

Gives history of having had for some time a gnawing and burning in his stomach but was never so severe as to hinder him from attending his usual work. He never restricted himself as to diet. This annoyance was of such small consequence that he never thought it worth mentioning, but now recalls that he had it off and on for quite a while between meals.

After eating breakfast went out to hitch his team and while doing so was taken with violent lancinating pain through his upper abdomen, the pain being so great that he dropped to the ground and remained there until his neighbors carried him into the house. He vomited two or three times but no blood. At the hospital I found him in great pain although not as severe as it had been at first, he having had a quarter of a grain of morphin. Respiration was shallow and hurried, his abdomen being held tense and board-like, pulse 80, temperature 98°. Physical examination was negative, except that of his abdomen which was very sensitive and the point of maximum intensity being in the upper right hypo-gastric region.

Incision was made through the right rectus muscle, high up, and duodenum examined, in which I found a small perforation about the size of a match stick, through the upper anterior surface of the gut. This was sutured with two rows of linen thread, reinforced by a piece of mesentery. A stab wound was made suprapubically, a tube put down into the pelvis, put to bed in extreme Fowler position with saline by rectum.

He made an uneventful recovery, leaving the hospital in about two weeks.

He was operated upon about three hours after the perforation and would have been an ideal case for gastroenterostomy, but at this time I never considered such in these cases. This patient was perfectly well about one year after the operation.

Case 3, Dec. 8, 1912.—N. L., age 36, occupation miller. Family and past history negative. About fourteen years ago he would occasionally have a slight attack of indigestion. He had four or five attacks in which he had considerable gastric disturbance and marked constipation, loss appetite, the discomfort in his abdomen being in the upper left side. He did not give distinct history of food distress after eating but complained of a soreness which was noticeable, especially upon pressure, that has been almost constant for some time past.

On the above date, after eating a heavy dinner and feeling unusually well, he was going up stairs about 5 p. m., when, just as he reached the top, he was taken with violent pain through his upper abdomen, so severe that he fell to the floor and rolled down the steps. A short while later most of his pain seemed to be centered in his left shoulder and he complained of it a number of times during the examination. The tenderness was excruciating in his belly; he vomited several times.

Next day, about 2 p. m., I was called in consultation by Dr. Lee Ganson, of Odessa, about twenty hours from the onset of the attack. I found the belly very much distended, eyes sunken and in general bad condition. The belly was so sensitive that the examination revealed little, but it was evident that some grave catastrophe had occurred, most probably a perforated ulcer.

Incision was made through the right rectus muscle. The belly contained considerable quantity of muddy fluid, and there was found a perforation at the beginning of the pylorus, anterior surface, which was sutured with two rows of linen thread and fortified with a piece of omentum; a stab wound was made suprapubically, a tube inserted into the pelvis, there being no attempt to swab out the belly. Patient was placed in the Fowler position with continuous proctoclysis. He did unusually well for the first few days but developed an accumulation of fluid in his chest which was aspirated on two occasions, eventually became purulent, and made it necessary to resect a rib and drain. From this on he made a slow but perfect recovery and is today perfectly well and has had no further gastric trouble.

Case 4, May 21, 1913.—Mc. C., age 40, occupation engineer. Father died of dropsy, otherwise family history negative. Past history of no consequence. Had always been a heavy eater and never had gastric disturbance until three or four years ago. Occasionally coffee for breakfast gave him some discomfort. Recently he has noticed that salads and such food late at night gave considerable gastric disturbance. About two weeks ago he began to have indigestion and some pain in upper chest. Food lodged in his stomach and remained there like a ball. Usually when he awakened in the morning he felt pretty well but two hours after eating there was a gnawing distress in his stomach and occasionally he vomited. Two days ago he felt uncomfortable in upper abdomen and was taken with violent pain. He vomited a number of times.

I was called in consultation about forty hours from the onset of the acute trouble, by Dr. E. L. Kimball. The patient's belly was much distended, pulse 102, temperature 98°. He vomited persistently and had been hiccoughing for the previous thirty-six hours. The first thing he complained to me about was the severe pain in his left shoulder which had been steady from the onset. The point of most sensitiveness was in the right upper epigastric region. He was bathed in perspiration, was rather sluggish in responding to questions, respiration was shallow and jerky, belly distended and tense. His skin and conjunctiva had a yellowish tinge which made me suspicious of obstructive conditions of the bile-ducts, and possibly a ruptured gallbladder. An unfavorable prognosis was given.

I had him transferred to St. Luke's Hospital, where a right rectus incision was made. The belly was full of purulent, watery material. Perforation was found on the posterior surface, well down on the first portion of the duodenum. He had a very stormy siege for several days, then began to convalesce. After about ten days began an irregular temperature, when eventually we located a pocket of pus in the right subphrenic space which was drained. From this on he made an uneventful recovery and is well and strong today.

Case 5, July 24, 1913.—C. A. M., male, age 22, occupation surveyor. Family and past history negative until one year ago, when he began to be bothered with stomach trouble, coming on when stomach was empty and relieved by taking food. This discomfort was mostly about 4 o'clock in the afternoon. He often laid on the bed before his evening meal on his back, which seemed to give some comfort. This discomfort has never been so severe as to keep him from work nor has he restricted himself as to diet, though some foods were more distressing than others. It was a common thing for him to have a certain amount of discomfort two hours after eating, which was relieved for a short while by the drinking of water or taking some kind of food.

On the 23rd of July he did not eat anything. That evening, when getting ready for supper, in reaching up he was taken with a violent, stabbing pain through his upper abdomen, most intense on the right side. Later he complained of considerable pain referred to his left shoulder, most marked about an hour after the perforation. The pain in his left shoulder seemed worse than that in his belly but on motion or any pressure the pain was excruciating in his belly.

He was operated upon about 15 hours after the perforation, a McBurney incision being made over the appendix which was found not to be the cause.

The belly contained a quantity of cloudy fluid. An incision was then made in the right upper belly, a perforation being found at the first part of the duodenum on the upper surface. It was sutured with two rows of linen, belly drained through appendicular incision by a split tube into the pelvis. Patient made an uneventful recovery, and is now perfectly well, weighing more than he ever did and is working every day.

This case was operated upon by my brother and associate, Dr. J. G. Matthews.

Case 6, Nov. 9, 1913.—Mrs. W. O., age 34. An uncle on father's side died with tuberculosis, also one aunt on mother's side, otherwise family history negative. Had measles, mumps and chickenpox when a child; began to menstruate at 14 years of age, regular, of the six-weeks type, with very little discomfort. Has had five children and two miscarriages; was badly torn with the first child and had what she called bed fever when the second was born, being ill about six weeks.

This a. m., about 6 o'clock, while still in bed and stretching, she was suddenly seized with a violent epigastric pain, lasting about half an hour. It became less severe for fifteen minutes while she was seized with a similar pain which continued. She vomited but no blood. Her physician was called, Dr. J. W. Sherfey, of Washtucna, who referred the case to me. It was necessary to give her several doses of morphin and eventually a little chloroform at frequent intervals to relieve her pain. The pain was first in the upper abdomen, later in the anterior chest and between the shoulder blades. About one hour after the perforation she had a pain referred to both shoulders. Questioning her as to its location, she said it seemed to be in the joint and on top of the shoulder.

During the physical examination, about sixteen hours after the onset of her trouble, she was under the influence of an opiate. From the history I had made my diagnosis of duodenal perforation but her belly was rather lax, the point of maximum tenderness being in the upper right epigastric region and extending down over the appendix. Pulse was 104, temperature 98.6°. I advised immediate operation which she refused and was put to bed until the next morning, at which time her condition was but little changed. Pain was not of a severe character; her belly was a little more distended; pulse 100, temperature 99.6°. She consented to the operation.

An incision was made through the right rectus muscle. The abdomen was full of muddy fluid and considerable organized lymph in the neighborhood of the pylorus and gallbladder. I found a very small perforation on the anterior surface of the first portion of the pylorus not larger than a knitting needle and at that time not leaking. It seemed to have been plugged with a piece of lymph. Around the ulcer it was much indurated for an area about the size of a dollar which made difficult the placing of sutures for the gut was quite friable. I buried the perforation under two rows of linen suture, fortified the area with a piece of mesentery, made a stab wound suprapubically and inserted split rubber tube for drainage which was very profuse the first twelve hours. This patient made an uneventful recovery and is today as well as could be expected in such a short time since the operation.

RECENT OBSERVATIONS IN NEPHRITIS.*

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It is quite remarkable to read the descriptions of nephritis by our early clinicians and note how little our present day textbooks differ in the understanding and classifications of this subject. Not until the most recent years does there appear to have been much added to our knowledge of nephritis which is of any practical aid to us. During the last three or four years we have become very much indebted to some of our best observers who have contributed valuable additions to our rather limited understanding of this frequent disease.

The frequent discrepancies between the symptoms-complex of the clinician and the anatomic findings have been the cause of contention between the pathologist and the clinician for years. It is now largely the result of this strife that we are beginning to obtain the results that will eventually place our kidney therapy upon a scientific foundation and will give us a satisfactory explanation of the very puzzling process of nephritis.

von Noorden and Strauss studied nephritis from the standpoint of metabolism but their results were disappointing. Koranyi based his results upon the quantitative relations of the kidney excretion. For his studies he used for the most part cases of one-sided diseased kidney. He found that the sick kidney was always inclined to excrete a thin urine which varied in its concentration less, the greater the damage to the kidney. He, therefore, concluded that the character of urinary excretion depends upon the changes in the kidney itself, since both the diseased and well kidney have the same blood supply. Trouble came, however, when he and similar investigators attempted to corroborate their clinical findings by the anatomic changes at autopsy. Kidneys which had shown completely normal quantitative excretion showed severe histologic changes, and kidneys showing almost the identical pathologic picture had given, during life, entirely different excretory results. Similar discrepancies between clinical findings and anatomic changes have also been frequently observed in the double-sided or the ordinary nephritis, with which we are most interested. In fact, it is of rather common occurrence for the pathologist to smile at the clinician's diagnosis of severe nephritis, because he finds little or no histologic changes in the kidneys. Hence it would appear that it is impossible to learn from the dead organ the explanation of the disturbance of the function of the living kidney.

We are then forced to fall back upon the experimental animal nephritis and certain biologic functional tests which may be safely carried out upon man. Experimental nephritis has been worked with for years, but no definite satisfactory conclusions could be obtained from their results when compared to the anatomic changes, for it was not an uncommon occurrence to have two poisons, one affecting the glomeruli causing a severe hyperemia, the other affecting the tubuli resulting in a severe anemia, and both producing the same change in excretion, such as oliguria or polyuria.

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Investigators have, therefore, come to the conclusion that the only way to obtain a satisfactory explantation of the working of the diseased kidney is through the study of the living organ by physiologic methods. These observations have largely consisted of studying the process of oliguria, anuria and, what is of still greater practical importance, that of polyuria.

This polyuria is usually the first indication of a toxic process in the kidney. Schlayer and his colaborers have concluded, as a result of a very extensive investigation by means of improved functional tests, that this polyuria is the result of an oversensitized kidney vascular system, caused by a poison or toxin. The polyuria increases and decreases with the irritability of this system. During this stage of oversensitiveness, small doses of diuretics produce profuse diuresis which upon the normal kidney are inactive. This was splendidly shown by Hedinger in his study with the digitalis group as diuretics.

This can also be demonstrated by observation on a case of a suspected contracted kidney with all its classical symptoms, as left-sided hypertrophy and increased blood pressure, possibly traces of albumin and a few casts, but the twenty-four hour specimen is normal or may be slightly less. Give this case during a long period small doses of a diuretic and the twenty-four hour specimen rapidly becomes polyurish. Now stop the diuretic, and what happens? The polyuria continues, which means that the only symptom, the polyuria, failing in the classical picture of a contracted kidney, has been artificially awakened and that all doubt as to the presence of a pathologic condition in the kidney has been removed, since the normal kidney is never capable of reacting to such small doses of a diuretic. This transition into the polyuria is nothing other than the same change of acute into chronic nephritis which ordinarily occurs spontaneously.

It was, therefore, concluded that the presence of polyuria, oliguria or anuria, depended upon the irritability of the kidney vascular system in the presence of a toxic substance, and that polyuria was usually the beginning, the other the end of a toxic nephritis. Between these two there must be a stage corresponding to the normal urinary excretion which Schlayer called pseudonormaluria.

The duration of the total course or of the individual periods depends upon the degree of injury to the vascular system of the kidneys. The severer the poison, the shorter the period of polyuria and vice versa. Or, if the kidney be only moderately injured so that it does not lead to death, it will pass through these three stages and then return to the stage of oversensitiveness or polyuria, corresponding to the transition of acute into subacute and finally into what Schlayer called pseudonormaluria.

This study of polyuria and oliguria is one principally of water elimination. Of even greater importance is the excretion of the other urinary constituents, more especially the sodium chloride. In similar manner to the studies with water elimination, it has been demonstrated by the exclusion of other parts of the kidney than the tubuli, that the Na Cl elimination is dependent upon the functionating power of the tubuli. Schlayer found that the vascular system of the kidney could be automatically and functionally intact in cases of almost complete Na Cl insufficiency.

It is very probable that the tubuli go through the same stages of irritability relative to Na Cl excretion as the glomeruli do in water elimination, and that increased Na Cl excretion is a frequent accompaniment to the polyuria. But if the glomeruli be seriously and the tubuli only slightly injured, naturally the disturbance of the two functions is not parallel. On the other hand, we may have almost exactly the same clinical picture of polyuria or low concentrated urine from two entirely different disturbances of the kidney.

If we accept these fundamentals as to the source of excretion of water and salts, further studies must be directed along the line of improving our functional tests which will enable us to more definitely localize the injured part of the kidney, since we have seen that injury to one or both may lead to the same clinical picture or degree of function. For example, a markedly oversensitized kidney vascular system can produce the same urinary findings, so far as the proportions of the water and salt are concerned, as a severely damaged condition of the tubuli which results in a certain stagnation in the concentration of the urine, the tubuli having lost the flexibility of the normal kidney in its concentration of the urine, one being due to polyuria, the other to the incapability to secrete a fluid of but low Na Cl concentration.

It has been found that the ordinary Na Cl test will aid us in this differentiation. If an increased amount of Na Cl above the normal intake be given to a case where the tubuli are intact and the glomeruli injured, the concentration remains the same as before, owing to the polyuria caused by the stimulation of the oversensitive glomeruli, but the total Na Cl excretion is increased.

In the second case, where the glomeruli are not damaged and the tubuli are, this increase of Na Cl intake results in about the same concentration as in the case of polyuria, but the greater secretion of Na Cl is not increased nor is there any increased water elimination, showing that the normal glomeruli are not sensitive to this Na Cl stimulation. We can, therefore, conclude that in any case, where we are able to obtain a marked increase in Na Cl concentration of the urine, there is no severe damage to the tubuli.

It is perfectly easy to understand that, in order to avoid erroneous conclusions from these examinations, one must take into consideration the intake of water and salt, as, for instance, a person drinking habitually large quantities of water will excrete urine of the same specific gravity and Na Cl content as a case of oversensitive glomeruli in a sclerotic, contracted kidney. In similar manner will the supply of salt influence the result.

The general conditions of the body, such as sweating, diarrhea, fever, the presence of edema, which influence urinary secretion, must also be taken into consideration. In fact, so many extrarenal influences play such an important role in the regulation of water and salt excretion, that it became necessary to find other substances which will be more reliable as functional tests for the kidney. Such substances must be ones whose excretion depends almost wholly upon the kidneys and which pass through them without any particular influence upon the kidney, also whose excretion is not influenced by the normal fluctuations in the kidney activity itself or by extrarenal conditions, but whose excretion remains normally constant as far as possible. Such desirable substances were found in milk sugar, potassium iodid, and phenolsulphonephthalein.

A long series of experiments resulted in the conclusions that the excretion of milk sugar was dependent upon the activity of the glomeruli, the potassium iodid upon the tubuli, and Rowtree and Geraghty, who did the original work with the phthalein, claim its excretion to be largely through the tubuli but also to a small extent through the glomeruli. All these three substances act as foreign bodies to the kidneys and their excretion is far less influenced by extrarenal conditions than that of water and salt.

The only extrarenal condition which may influence the milk sugar elimination is a severe cardiac insufficiency. In all of these cases there is a prolonged excretion of the sugar. But the test may be employed as soon as compensation has been again restored.

The milk sugar test is carried out in the following manner. Twenty cc. of a 4 per cent. solution of milk sugar, which has been sterilized for ten minutes on each of six consecutive days, is injected intravenously. Normally the entire sugar is eliminated in four to five hours. The prolongation of its excretion over six hours is considered an indication of a diseased vascular system of the kidney. In some severe cases of glomerular changes there will be little or none of the sugar excreted.

The potassium iodid test is very simple and reliable. 0.5 gm. is given by mouth. After twenty-four hours the urine is examined hourly for the first appearance in about twenty-six hours and has all appearance of the free iodid. Normally it first appears in about twenty-six hours and has all been excreted in forty hours. A marked retardation of its excretion as to forty hours and finishing in eighty hours is proof of the damaged tubuli.

There are several different apparatus for the phthalein test which is held by such men as Cabot as being a very reliable indicator of the exact clinical picture of the kidney. Six gm. of phenolsulphonephthalein in 1 cc. of salt solution are injected into the lumbar muscles. Normally it appears in the urine in five to fifteen minutes and 50 to 70 per cent. is excreted in the first hour and 15 to 20 per cent. in the second. This test has been employed more for surgical cases but is also reliable in cases of nephritis and may often give warning of an impending uremia.

Other tests have been employed as the nitrogen elimination by giving 20 gm. of urea to the normal diet, whose nitrogen content has been determined. Normally almost all of this will be excreted during the first day and very little the second. A retardation in this elimination is found principally in the uremic form of nephritis and is nearly always associated with a high blood-pressure.

Until these recent works, clinicians had great difficulty in explaining the various conditions that occur in the course of nephritis. For example, in the case of polyuria with general edema the polyuria was supposed to be the indicator that the kidney was again so-called permeable and that the edema was excreted in the form of the polyuria. But in cases of polyuria without edema, one met a puzzle, an explanation of which has been in various ways attempted as being due to the increase blood-pressure, or through the compensation of the hypertrophied glomeruli which are often found along side of the destroyed glomeruli, or through the increased water intake. But these theories failed to give satisfactory explanation of the transitional changes of the oliguria in the case of severe edema nephritis into the polyuria of the secondary contracted kidney. The edema disappears as the polyuria increases, but the polyuria does not stop with the disappearance of the edema.

The polyuria of this kidney would appear to be an indicator of improved excretory power of the kidney but give this case the milk sugar test and it will invariably show a prolonged sugar excretion and can not mean a return of its permeability, in spite of its apparent good elimination of water and salt, but rather indicates a distinctly injured kidney vascular system, resulting in an increased sensibility of the glomeruli in the presence of a pathologic irritant. The milk sugar gives us a means of discovering a damaged vascular system of the kidney in the absence of all other signs of renal insufficiency.

From the employment of these tests, we have succeeded in obtaining a presentation not only of the functional activity of the kidney but also the location and degree of injury. One is also able to understand most all of the former atypical cases which would not fit our classifications.

Now comes the all-important question to us practitioners, of what value are all of these experiments by way of diagnosis, prognosis, and therapy. As for the diagnosis, it has contributed very valuable aid. For example, it enables us to decide whether those frequent cases of albuminuria are of harmless origin or the indication of kidney insufficiency.

Furthermore, it has taught us that the nephritic polyuria is the expression of injury to the glomeruli which have become oversensitive or irritable. They are of equal value in the question as to whether a case of nephritis is healed or not. Ordinarily we have learned to regard a case healed by the constant absence of albuminuria but this does not hold, as these tests will frequently show the transition of the acute into the chronic nephritis which was regarded as a healed case, owing to the disappearance of albumin. In order to speak, then, of a healed nephritis, not only must the albumin disappear but the excretion of water and salt quantitatively and qualitatively must be normal and, finally, the milk sugar and potassium iodid must be excreted in normal time.

These functional tests are probably of even greater value in the chronic than in the acute nephritis, especially in the small contracted kidney, of which such a large percentage run their course with little or no albuminuria and at autopsy are discovered to be of a severe variety of nephritis. How very difficult it has been to recognize many of the lead poisoning and luetic kidneys, also the symptomless, small, contracted kidney of the aged. By the employment of these comparatively simple means we are able to recognize these conditions in their initial stage, many of which were previously only discovered at autopsy.

As to the prognosis, wherein lies the benefit of these methods? Through the sharper differentations which they enable us to make, surely we are in a far better position to judge as to the extension or retrogression of the process in the kidney.

To what extent these functional tests have aided us in our therapy is as yet difficult to estimate and will require further study. However, so much may be said. The possibility of learning the functional condition of the diseased kidney, whether it be over- or undersensitive to various substances, is certainly of great value in our therapy as, for example, if the case be of the vascular type with its increased sensibility the glomeruli but excretes all albumins in normal manner, why starve this patient of his often much needed meats, which is the regular routine?

On the other hand, this same case has its vascular system impaired and is exerted beyond its normal work in the elimination of large quantities of water and will tire out more quickly than the healthy kidkidneys. Why add additional burden to this handicapped kidney by that frequent advice to flush out your kidneys with an abundance of water, or what is even as bad, to feed them on two or three quarts of milk, which one does in the strictly milk diet. Similar damage can be done by large quantities of Na Cl, causing increased thirst, polyuria in some, and oliguria in others, with a retention of Na Cl in the tissues and finally a water-logged condition of the body. For further aid we must look forward to further investigations along these lines.

DISCUSSION.

Dr. W. R. Tyndale, Salt Lake City: The importance of the newer work done upon the kidney is vital. From a practical standpoint the difficulty arising is that these newer tests are somewhat difficult to carry out. The patient must be in a hospital and under careful nursing conditions in order that all his urine may be collected and to carry out the necessary detail to arrive at results, but the latter are worth the work and therefore it behooves all of us to become familiar with these tests and to give our patients the benefit of them. I have been interested during the past year in the work of a young investigator in this country, Martin H. Fisher, of Cincinnati. His work on edema and acidosis is epoch-making in its conclusions and deductions. That work may not all be true, but it is a step in a new direction. He shows that a condition of acidosis will account for a great deal of the nephritic symptoms without any uric acid. It is not a new thing in the chemistry of the body that there is a continual effort on the part of nature to keep an alkaline or neutral state in the tissues. Most of the breaking down or building up of crude materials is accompanied by the formation of acid and the regulation of this balance is one of the functions of the kidney. When this balance gets out of order the kidney is the great sufferer. Fisher makes the statement that the ordinary vomiting of pregnancy is a condition of acidosis. His regimen is simply the giving of large quantities of alkalies through the rectum and the mouth. So I think the Fisher method ought to be given a trial.

Dr. A. C. Behle, Salt Lake City: For about twenty-five years we have been depending upon old urinary findings in our diagnosis of nephritis. The surgeons first began to investigate functional activity of the kidneys. The responsibility of removing one kidney without knowing what was the function of the other or whether there was another, has been so serious that they have worked hard on the problem for the last ten years. In the last five years the internists have specially taken up this work in nephritic cases to determine the functional activity of the kidney, the treatment and prognosis. To Miller, of Munich, we owe more credit than to any one in this work. Within recent years two investigators in Baltimore have been doing excellent work on the phenolsulphonephthalein test which in my opinion is the most valuable of all functional tests we have today. Last week I observed a case that had been treated in San Francisco and one that had been treated in New York City with lactic acid bacilli and other methods to diminish the poisons within the system. The patient had a keratitis and a specialist stated there was autointoxication. Because there was no albumin nor casts in the urine, the kidneys were all right. The phenolsulphonephthalein test showed she was excreting only 15 per cent. in the first hour, whereas she should have excreted 50 to 60 per cent. This test is not difficult. It is not necessary to send a patient to the hospital to carry it out. In fact my work with the test has been almost entirely in private houses.

Dr. F. A. Speik, Los Angeles: I think this test demands hospital attention because the ureter should be catheretized to find the functional condition of each kidney, and this should be backed up by injection of collargol in the ureter to find kinks or extension of the calyces of the kidney itself. In a recent case we injected the phenolsulphonephthalein and found on the right side the man had a certain amount of pus. The right kidney excreted the urine in about six minutes and the left in about eight. We supplemented this by an injection of collargol, took radiographs and found the right ureter was kinked just back of the pelvis of the kidney and the pelvis was dilated. This shows it is necessary not only to catheterize the ureters but to take a radiograph as part of the routine performance.

Radiography in the Diagnosis of Pulmonary Tuberculosis. 1. The gross lesions of pulmonary tuberculosis give a characteristic appearance in the radiograph.

2. The diagnosis of pulmonary tuberculosis by the radiograph must be based on the localization of definite areas of increased density.

3. In the vast majority of cases the radiograph will demonstrate any lesion that the physical examination will reveal.

4. The radiograph will demonstrate much more accurately the extent of involvement than any other diagnostic agent.

5. In determining the operability of a surgical condition in a patient suffering also with pulmonary tuberculosis or in giving a prognosis in a known case of pulmonary tuberculosis, the radiographic examination is essential.

6. In border-line cases the Roentgen ray cannot determine the activity of a tuberculous process.

7. No conclusions can be drawn from the shadow of the hilus in the adult.—A. B. Moore in Interstate Medical Journal, March, 1914.

BLOOD-PRESSURE READINGS IN GENERAL PRACTICE.

By R. W. Stearns, M. D.,

MEDFORD, ORE.

This discussion will not be made theoretical, for the general practitioner, as a rule, has little time or opportunity for theoretical study. My aim is to present briefly some of the more important uses to which the sphygmomanometer may be put in the every-day run of a physician's work. Current literature is pregnant with articles dealing with the finer scientific points and the theories relating thereto. I will, however, begin by outlining some of the causes of high and of low blood-pressure.

CAUSES OF HIGH BLOOD-PRESSURE.

1. Vosoconstriction, particularly of the splanchnic arteries, due to:
    a. Arteriosclerosis.
    b. Toxic processes.
        (1) Putrefactive processes in the intestine (very common).
        (2) Alcoholic dissipation.
        (3) Toxic processes from kidney or other organs.
2. Cerebral compression.
3. Overstimulation of heart.
    a. Prolonged overwork.
    b. Heart stimulants.
    c. Excessive eating.
4. Overfilling of blood vessels.
    a. Salines (temporary).
    b. Transfusion (temporary).
5. Excessive viscosity of blood as in eclampsia.
6. Cutting off a part of body circulation, as in kidney resection or use of Momburg constriction.
7. Nerve stimulation.

CAUSES OF LOW BLOOD-PRESSURE.

1. Vasodilatation.
    a. Loss of constrictor control through sympathetic system, fainting spells, shock.
    b. Action of drugs.
    c. Action of toxins in disease.
2. Actual loss of blood volume.
    Hemorrhage.
3. Heart weakness in
    a. Acute or chronic infections.
    b. Wasting diseases.
    c. Cardiac asthma.
4. Nerve exhaustion.
5. Surgical shock.

This is not a complete list, but will serve for practical purposes.

All my readings have been made with the Rogers' Tycos instrument with wide arm-band. I have taken as the normal blood-pressure at 20 years of age 100 mm. in females and 120 mm. in males, and have added 1 mm. for every two years over twenty.

Life insurance is a very useful field for blood-pressure work but I will pass over it briefly, for anyone examining for the better companies has already familiarized himself with the tests and been furnished reliable literature by its medical director.

One interesting case emphasizing the need for thorough investigation into causes of high blood-pressure follows:

Mrs. C. B., age 25 years, always well and strong and with good family history, gave a reading of 145 mm. and showed slight trace of albumin. Close questioning revealed no cause for such a deviation from normal. On returning ten days later the applicant stated that he had been motor-cycling many miles under high nervous tension on daily tours of fruit inspection, in which he was trying to make a record. He was directed to cut his work in half and return in another two weeks, at which time his reading was 128 mm., urine negative and remained so during several subsequent tests.

A blood-pressure reading should be as constant a preliminary to surgical work as the stethoscopic or urinary examination, for it is just as important. In any suspicious risk readings should be made at short intervals before, during and for several hours after the operation. The tubes of any standard instrument may be lengthened by stiff rubber tubing and these readings made by the anesthetist with practically no inconvenience whatever. This will often give warning of impending shock or collapse before the pulse or respiration begin to fail. This is especially true in operations where considerable manipulation or hemorrhage is unavoidable. I have seen the blood-pressure drop below 88 mm. several minutes before the pulse showed any marked increase. It must be born in mind that chloroform continually lowers the blood-pressure and that ether causes a rise of from 20 to 90 mm. during the first and second stages, after which it drops to about normal.

Blood-pressure readings are now being used a great deal as guide in prognosis and treatment of acute infections. This is especially true in typhoid fever, in which they furnish the best guide to stimulation or as a warning of slow hemorrhage. Gibson gave the rule that "when the arterial pressure expressed in millimeters of mercury does not fall below the pulse rate expressed in beats per minute, the fact may be taken as an excellent augury, while the converse is equally true." The rule is often used as a guide to stimulation in pneumonia and other acute toxemic conditions. In sudden high temperature with proportionately fast pulse the converse of the rule may be fallacious.

A third class of causes in which these readings are valuable includes nervous disorders, tuberculosis and some heart lesions showing hypotension. When the low normal limit of 115 mm. in adult males or 95 mm. in females is passed, it suggests neurasthenia or melancholia of the depressive type. Crile has shown that fear often reduces the blood-pressure and believes that worry, which he regards as a state of chronic fear, may cause a prolonged low reading. On the other hand, during an exacerbation of melancholia or in aggravating nervous worry, the pressure often arises. In other words, nerve exhaustion lowers blood-pressure, nervous excitement raises it. This was beautifully illustrated in the two cases which follow:

A young woman, living under very aggravating circumstances, gave a reading of 170 mm. which dropped after a few days of pleasant surroundings to 120 mm. A young man came to the office direct from a heated discussion in which a law suit was threatened and his reading was 175 mm. The following day after a good sleep it was 138 mm. Janeway states that "excitement is indubitably the most powerful cause of increased pressure in the normal man."

In tuberculosis blood-pressure not only helps in the diagnosis but is an excellent criterion for prognosis and treatment. A gradually rising pressure argues for a favorable outcome and vice versa. In gauging exercise for these patients remember that it raises the blood-pressure 10 to 15 mm. for a short time, after which it drops to normal or slightly below. If the reduction be marked, the exercise should be reduced, for it may bespeak a weakened myocardium.

In valvular heart lesions we still need further data to give reliable information, as in several recorded cases the pressure has remained at or above normal until shortly before a fatal termination.

General kidney cases furnish a most interesting field for blood-pressure observation. I have within the past four years had two cases in which it would have been difficult to clinch the diagnosis without it. They were in comparatively young women, presenting a clinical picture suggestive of chronic interstitial nephritis but with no deciding factor and with almost negative urinary findings. Both came to me for treatment of what they thought was heart and nerve trouble. Blood-pressure of 220 mm. in one and 225 mm. in the other determined the diagnosis. Both were relieved by rest and marked eliminative treatment, so far as the symptoms were concerned. But, much to my surprise, the blood-pressure in each advanced several points while under observation. I believe in both there had been a beginning failure of heart compensation which was relieved by the treatment, thus bringing up the blood pressure. In both I gave a bad prognosis. One died within 18 months and the other is living in comparative comfort with a blood pressure of 230 mm. Any attempt to reduce her pressure by vasodilators causes an aggravation of her symptoms.

In one other case which I saw in consultation the sphygmomanometer proved to be a most valuable aid in treatment. A woman who had uremic convulsions was at the time in what appeared to be a terminal uremic coma. The doctor thought she had all the depletion she could stand but, on finding her blood pressure above 200 mm., we removed nearly another quart by venesection and replaced it with an equal amount of saline intravenously. We then kept up a hypodermic administration of saline until two quarts had been given. The patient recovered and three months later successfully underwent a major surgical operation.

I have had other cases of interest but these three serve to attest the value of blood-pressure readings in kidney cases. From my study and observation of these cases I would divide them into three classes according to the following outline:

	Symptoms.	Dangers	Treatment.
Toxic type	Polyuria with nocturnal frequency, anorexia, nausea, headache (not relieved) by nitroglycerine), bad color loss of weight.	Acute or chronic uremia.	Elimination, rest in bed, diet, salines, Venesection in threatened uremia.
Cardiac type	Dyspnea, rapid pulsating sometimes, irregular heart action, edema of the lower extremities, weakness.	Gradual or sudden cardiac failure.	Elimination, rest in bed, diet, stimulation when needed. later graduated exercises governed by blood-pressure readings.
High blood pressure type	Nervousness, insomnia, pulsating headache (relieved by nitroglycerine), transient cerebral attacks (b) flushings, (b) anginal attacks, (d) aphasias, (e) hemiplegias.	Apoplexy.	Elimination, rest in bed, diet, vasodilators occasionally.

You will find in most cases that one class of symptoms predominates. In quite a majority the treatment should be directed toward relief of the toxemia by the measures outlined. In the second largest class the heart condition demands our main efforts in treatment. In some of these cases vasodilitators only aggravate the symptoms and direct stimulation is indicated.

Do not forget that high blood-pressure is a relative term and that 200 mm. or more may be normal for some people. By normal here I mean the lowest point to which it can be reduced and the individual remain in health and comfort. Too sudden and marked a reduction may cause anuria and uremia. Joseph L. Miller reports a case of collapse after one-half grain erythrol tetranitrate. An extra pressure seems necessary to force sufficient blood through the constricted arterioles of the kidneys and to a less degree the other organs. It has been my custom in doubtful or mixed cases to start with ten days marked elimination and, if symptoms are not being reduced, add either vasodilatation or cardiac stimulation as indicated.

The two cases I speak of both stopped the vasodilatation treatment of their own accord after twenty-four hours trial, so marked were the evil effects, and both remained more comfortable with a blood-pressure of over 220 mm. A third case, however, reported the best health in months after a reduction of 70 mm.

Miller reports a case of permanent improvement after a fall from 222 to 90 mm. He was unable to explain such a drop, although elimination and vasodilatation were used.

In talking so much of high blood-pressure in arteriosclerosis and nephritis, let us not forget that normal or low blood-pressure by no means excludes either disease. Albumin, casts and typical pipe-stem arteries are possible with a blood-pressure of 120 mm. or lower. Unless the splanchnic vessels are sclerosed, the pressure may not be raised much, likewise in extreme weakness it may be low.

Lastly let us consider blood-pressure readings in obstetrics. I know of nothing that for the time, trouble and expense involved affords more satisfaction to the obstetrican in general practice. I will always believe that my first eclamptic case might have gotten through with less trouble and possibly the child saved, had I checked up my urinary findings with a sphygmomanometer. The woman had been having some headache and stomach distress and, when she applied to me ten days before delivery, showed a mild albuminuria. I put her on an elimination treatment and in a few days the symptoms were better, but the headache soon returned with greater severity and I insisted that she go to bed and have a nurse. Before the nurse arrived she was in convulsions. We saved the mother but lost the child. Blood-pressure reading upon her first visit to the office might have warned me of the real imminent danger and given an opportunity for timely treatment.

In the second case the sphygmomanometer not only gave the warning which enabled me to get elimination well under way, but also furnished the check on therapeutic measures employed. It was a similar case to the first except a more thorough treatment was accomplished before the onset of labor and the mother and child were both saved. As I depend a great deal on bleeding in these cases, and as she was a small, slight woman, I used the pressure readings as an aid in gauging the amount of blood removed. I feel it is much safer than relying alone on the pulse or percentage of blood removed to the body weight.

In the third case of eclampsia to which I was called in consultation, mother and child were both saved after very strenuous treatment. I believe, however, the lives of both might have been made more secure and the recovery of the mother more rapid had the blood-pressure readings been made the guide to treatment at first.

The woman had been carrying albumin for several weeks and, when seen early one afternoon, showed a blood-pressure of 160 mm. She was given veratum virdi for nervousness and salts were ordered for the next morning. At 2 a. m. they telephoned the doctor she had fainted. Soon after he arrived she went into her third eclamptic convulsion and he at once summoned aid. We saved both mother and child. I cite the case merely to emphasize that the blood-pressure reading at first call was an indication for extreme eliminative measures and close watching.

Faught gives the following rules for obstetrical cases. Up to 125 mm. may be disregarded. From 125 to 150 mm. calls for eliminative treatment. Above 150 mm. is a warning of impending eclampsia and calls for very rapid elimination and induction of labor if it continues.

But there are exceptions to all rules, this one not excepted. Dr. H. C. Bailey, of New York, states that the early toxemias and the fatal fulminant type late in pregnancy both give low readings. He cautions against the use of veratrum viridi for reducing high pressure, because of its liability of producing collapse. I believe careful blood-pressure readings will bring venesection more into favor as a rational treatment for these cases.

Hirst, in *The New York Medical Journal,* June, 1910, says, "The earliest and most constant sign of toxemia is the latter half of pregnancy is a high and constantly rising blood-pressure." To quote Faught, "The blood-pressure tests will furnish a more adequate guide to the seriousness of a pregnancy nephritis and the urgency of inducing labor than will the urinalysis." Janeway agrees with Faught and Hirst.

These are only a few of the interesting and instructive cases collected from blood-pressure readings on several hundred patients and are no more striking than any one will find who uses the sphygmomanometer as freely as he does his thermometer. No man should feel he is doing full justice to himself and patients unless he adds a standard instrument to his armamentarium.

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SURGICAL PROBLEMS OF THE COUNTRY PHYSICIAN.*

By G. W. States, M. D.,
PRESTON, IDA.

In an editorial in one of the medical journals some time ago the writer made a statement something like this: "If you are a beginner in the practice of medicine and contemplate entering the field of surgery, go somewhere into the country where you can engage alone in an active country practice for five years or more." Such advice is good, for it will either make a capable, resourceful, self-reliant man of one, or it will sift out those who have the too-often mistaken dream that they are born surgeons. It is, perhaps, the dream of most undergraduates and the beginners in the practice of medicine that they are destined to become masterful surgeons. Five years in active country practice will either dispell that idea or set in operation a train of activity marking the life to that end. By this time your resourcefulness will have been tested to the limit, your judgment sounded, your measure taken, weighed in the balance and either found wanting or capable of doing as good and efficient work as any one can do under like circumstances. By this time there will have been formed a natural bent or inclination of mind to find satisfaction in the working out of surgical problems.

Few men are fitted by either temperament, natural talent, training or opportunity for a commanding position in surgery. Most men are, as a rule, too lazy professionally to undergo the continuous application required to secure a thorough training in histology, pathology and anatomy in not only its theoretical, but its scientific and practical aspects and application, without which no man should presume to be a surgeon. A man must be a student always, a painstaker and thorough in his analysis of cause and effect when applied to scientific diagnosis.

Our first duty is to get ourselves right with our patient, dismiss every consideration from our consciousness, place ourselves in our patient's position and settle first what is for his best interest from an honest, conscientious, moral standpoint, going more thoroughly and carefully into the contraindications than the indications for the operation. Even of more importance are the contraindications for it is nearly always in these that mischief is done. Many a catastrophe could be averted if before the operation every means could be exhausted to determine positive indications of good resistance and recuperative powers. Every operation is a depressant to the vital forces in proportion to its severity, location, extent and time required to perform, and no conscientious surgeon will hazard a life without taking into consideration the question of vital resistance as a factor of safety.

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To come more definitely into the field of country surgery, let us consider for a moment what this should embrace. Here at the outset is an opportunity for honest opinions to differ. Some would restrict the country doctor to the minor surgical cases, the most pressing emergencies and obstetrics, denying him the right to enter the field of gynecologic, abdominal, thoracic or cranial surgery. But, fortunately or unfortunately for the confiding public, the country doctor is not now willing to be tethered by the chain of custom of a score of years ago. He is a progressive. He realizes that patients will get well if put right with a clear field ahead, free from sepsis and from devitalizing constitutional diseases.

The country surgeon should be qualified to successfully handle by radical operation the various hernias. All can call to mind tragedies resulting from the patient and friends, and perhaps the trusted medical councilor, advising delay until some surgeon could come two or three hundred miles to do an operation which could have been successfully and easily performed by any up-to-date, resourceful country surgeon. The same applies to acute appendicitis, ectopic pregnancy, penetrating abdominal wounds, intestinal obstructions and cranial depressions. In these conditions human life often depends upon prompt relief. An operation for appendicitis performed in the little country hospital at the right time, well and thoroughly done, is vastly better than a delayed operation in the big hospital at the wrong time, even if most exquisitely and brilliantly performed but with disastrous results.

I do not refer to the masterful men who are adding day by day to the sum-total of surgical knowledge when I say that often the clever and brilliant operator is a detriment to the profession in the smaller towns, because it lowers the country surgeon in the estimation of his people when he may be the superior in the bedrock qualities of a good, sane and safe man. Instances of painful memory are too frequent because of the mistaken idea that the patient must be transported two or three hundred miles to a large medical center for an operation which could be done by the doctor most interested in the patient and most jealous to maintain a healthy professional and social reputation.

There are certain classes of work which I very much doubt the wisdom of the country physician attempting to handle. There are cases which should be placed in the hands of the trained internist first and the master-surgeon second, because of honestly earned eminence in their chosen field. Cases requiring gastroenterostomy, intestinal anastomoses, invasion of the cranial cavity should be attempted by any but the master-surgeon and by that I mean a man whose general education, professional training and technical experience place him in the master-class beyond all cavil; a man whose habit of thought and professional attainment is of such a type that other men rise to it with labor and difficulty.

Another question in the country is who should do the surgery. Should all the doctors pose as surgeons? Not by any manner of means. It is only one out of several, only here and there a man with proper training and experience to successfully and acceptably do the work falling to the lot of the country surgeon, and when he has demonstrated repeatedly his fitness he should be recognized by his associates. Here is where trouble begins. Human nature asserts itself and his neighbors look upon him with envy and jealousy and there springs up professional dissensions dividing the profession and sometimes even communities into warring factions, degrading the profession and more or less demoralizing the work of the honest, high-minded, capable physician.

When the country physician, located far enough from the commanding centers and in a fairly populous district, decides to enter the field of surgery he should place himself under the instruction of a master hand. Do I mean he should go to Rochester, Minn., for a ten-day sojourn, or spend two weeks with Oschsner, Murphy and Bevan? No. The man who makes such a trip does not go in seriousness or with a high resolve to properly qualify himself for the position to which he aspires. That man is handing the public a gold brick, cheapening himself with thoughtful men and inviting his own disaster.

If he be serious in his ambition, he could not, for the good of himself and the public and in justice to his fellow practitioners, whose good will and aid he must have, afford to spend in scientific, technical and operative training less than one year and better two or three. With less than this he cannot expect the support of the high-minded men in general practice.

At the present time much of the surgery is on a catch-as-catch-can, competitive basis with the general public as the victim. It is time that there should come a reform within the profession along this line or reform will be forced from the outside and the state will prescribe a most rigid standard for those who wish to qualify as surgeons.

For one I believe the profession should lead in this reform and demand more training and a higher standard of education in those who pose as surgeons.

I do not know what others may think but my observation teaches me that this reform cannot come too quickly for the good of the public and the uplift of the profession. The general public is receiving instruction on medical and surgical subjects from high class sources, through some of our best papers and magazines, and is finding out that, just because a patient survives an operation and gets well, it is not necessarily a good piece of surgery. They are finding out what constitutes good surgery not alone from their standpoint but from ours as well. An educated and very intelligent layman in my office not long ago began with me a discussion of these questions and I was astonished at the fund of information he possessed, gathered from reliable magazine sources, and I realized as never before the necessity for an awakening on our part that we may live up to the ever-increasing standard a progressive civilization is marking out for us.

Another side which should receive the serious consideration of the profession in the evolution of a competent and all-round surgeon is the effect it will have on the general practitioner. There is in the public mind too great a difference in the esteem with which the surgeon and the general practitioners are held. This is often unjust and unfair to the general practitioner and the surgeon too aften takes an undue advantage of that condition. The surgeon as a consultant pockets a fee of $10, $25 or $50 before the eyes of the general practitioner and perhaps before the patient and friends, while the medical practitioner must be content with his $2 fee, when the work of real worth, the concentration of every power of the mind for the unraveling of the diagnostic mystery has been done already by the general practitioner. Such a disparity in compensation and the public idea of the relative importance is not as it should be, when the work of one is of the same commanding importance as the other.

This unfortunate state can be corrected only through education of the public and of the physician. It must come from an up-to-date office equipment with an up-to-date man to use the equipment. More standard works well read, one or two more high class medical journals daily perused than your competitor, will raise your importance and spell the difference between the two-dollar and the ten-dollar fee. The larger fee will not come as a present, but because it is earned, and it is not really earned until the public senses through constant education the paramount importance of scientific diagnosis.

Another side the country surgeon must study is his equipment. Let his office equipment be as complete as his financial condition will allow, for it is the best dividend payer there is, with the exception of a few good old ladies boosting for him. The country surgeon must make a study of essentials and leave behind, when going out from the office, the things he can get along without. The absolute essentials are few and what is the use of carrying around a lot of useless baggage from one year's end to another. Let the country surgeon have an orderly equipment so that, if the phone rings and Smith's ten-year-old Johnny has a broken leg, he picks up his grip in one hand, confident because at the end of the last trip he replaced everything used on that case, and with the other hand picks up a little bundle of assorted splints and a few other things previously prepared and placed together for just such an emergency. A man then goes in confidence and this is faith which in oneself spells success.

In conclusion let me point you to the glorious achievements of the past and the greater promises for the future. It is a fact that this great profession of ours is coming grandly into its own and in its medical and surgical aspects it is surpassing in its relief of human suffering the fondest dreams of the altruists of all ages. In this great work let the man in the country improve his talent and do his share, that he may be ready for the next great epoch in our sphere of progress which is that of keeping the world well instead of so much curing them when ill.

DISCUSSION.

Dr. Fred W. Taylor, Provo: There is practically no difference between the problems of the country surgeon and those of the surgeon in the large hospital. If a man is prepared well in the country he can do just as good work as the man in the large hospital, surrounded by every modern convenience. If he takes four years high school, premedical college work, medical college work and one or two years as interne at the elbow of some great man, it doesn't make any difference where he locates, that man is going to do good work and you cannot keep him down. It doesn't make any difference what kind of case he is called to or what instruments he has at his command, he will make a success where an uneducated, unprepared man will make a failure.

Dr. S. L. Richards, Salt Lake City: A short time ago I was in the country and, calling at the office of two young doctors, asked them how they were getting along. Very nicely, they said, only we have got to do surgery; we are tired of sending our patients to Salt Lake City or Idaho Falls or somewhere else for operations. We have just bought a work on surgery and we are going to study it and do our own surgery from now on. In many instances we need to be proud of many of our country surgeons and, if there is to be any difference, they should have the advantage over the city surgeons in a better working knowledge, because they have not the facilities to work with, not having some one at their elbow to guide or assist them in their work. I can remember thirty years ago seeing a doctor pull a little case out of his pocket and amputate a thigh just as nicely as you can do it today and in less time. I would like to see the distinction between the country and city doctor dropped because it is not necessary.

Dr. E. H. Beckman, Rochester, Minn.: In the doctor's division of the cities according to population, I am glad to say that I come from a country town. In fact, I left the city to go to the country to do surgery, and I have not been sorry to this time. If we go back into the history of most of our prominent surgeons of today, we find that a large proportion received their early training not in a city but in the country. One is often surprised, in traveling about and visiting men of reputation, to discover that their equipment, so far as mechanical things are concerned, is exceedingly small. Some of the greatest discoveries have been made under circumstances that were not of the best. One is often confused in regarding equipment, such as tiled floors and tiled operating rooms, rather than the essentials that are actually necessary. Too much praise cannot be given to the men who live in the small communities and do good surgery. The man living in the country nine times out of ten is better equipped to succeed, if he has the right kind of backbone and the right kind of energy, than the man in the city. He has not the social obligations to take him away from his work; he doesn't waste time in going to the theatre and trying to build up a practice by becoming acquainted with people as in the city. His time is spent in actual work. If a man has the ideals and the energy; if he is willing to devote the time and make the sacrifice, he is certainly going to succeed, whether in the country or the city.

Dr. A. W. Morton, San Francisco: During a recent trip to Venice, in conversation with the manager of a glass factory, I asked if he had difficulty in keeping help to do this expert work. He said the men doing this class of work can do nothing else and only the children of these glass blowers can learn to do this work. If we could have commenced educating the children a few generations back we might have better educated doctors. But we are approaching more to that by increasing the amount of preliminary education that the doctor has today. If we look back over the history of medicine, almost all of the great discoveries have come from the country practitioner. If a man has ambition and has it in him he will succeed, as he meets problems that he does not encounter in the large clinics of the city.

Dr. Union Worthington, Salt Lake City: I was born in a small town in Kentucky and I know what stale rottenness there is in the small towns of this and other states in the West because a man goes into those places, sits down and reaches the very lowest level because there is nothing to stimulate his ambition. The country develops a man physically because he gets the fresh air and the sunlight, but there is more to it than that. It is the individual man, his makeup, his physical condition and the opportunity for education. There has not been a time but that, if the desire for an education was in a man, he would get the opportunity. The large commercial institutions of this country usually bring in some man born and reared in the country and place him in charge of their affairs because his physical condition and mental development had the proper atmosphere and surroundings.

Dr. States, in closing: I read this paper to bring out just the discussion we have listened to. I would like to see the day come when there is not the dividing line between the country and the city doctor, but that condition is not going to be wiped out when patients, after we have given them our best care and have gone into their cases as carefully, systematically and scientifically as is possible, go off into the city and some of the big city fellows say, "Oh, you know he is just a cheap country doctor." These conditions must be mended and the men who are doing honest, conscientious, fair and square work in the country must be recognized as well as those who are doing the work in the cities.

CANCER CONTROL. PRECANCEROUS LESIONS.

By Joseph C. Bloodgood, M. D.,
Baltimore, Md.

To improve the results, to increase the number of cures of cancer there are two factors over which we have control—the duration of the disease and the treatment. Long experience and investigation seem to show that cancer never begins in healthy tissue. There is always a preexisting local defect which is benign and in which later there may be a cancerous development. When this previous defect is situated on the skin or beneath it or on the mucous membrane of the lip, tongue and mouth every one is aware of the little lesion. These previous defects or local lesions in which cancer may develop may be called precancerous.

The complete removal or complete healing of these precancerous lesions will in my experience accomplish a cure in one hundred per cent. of cases; that is, none of these people will die of cancer from a growth in the situation in which the precancerous growth has been removed. Such cases cannot be called actual cures of cancer but we can be quite certain that such treatment prevents cancer in many if not all of the patients treated.

First, little tumors which may have been present since birth, or noticed later in life. These little tumors may occur on the skin as warts, moles or nevi. They may be felt beneath the skin as hard or soft nodules the size of shot, peas, beans or larger, or they may be felt deeper, as in the breast, thyroid gland or deep in the neck.

Second, unhealed ulcer of the skin and mucous membrane. Here there may be a wound or a burn, or some injury or disease which destroys the skin or mucous membrane. The wound never heals or heals badly and then breaks down, the open sore remaining for weeks, months or years, often irritated by the patient. At any time, usually after months or years, cancer may develop in such ulcers. Such ulcers are especially dangerous on the tongue. A week's delay here is equivalent in danger to six months' delay for a like ulcer on the lip.

Third, some form of chronic irritation of the skin and mucous membrane which does not actually destroy it. For example, chronic inflammation and irritation about bad teeth, (cancer of the gum never develops about healthy, clean teeth). Inflammations and irritations of the mucous membrane of the mouth, lip or tongue in smokers, from chewing tobacco or from snuff. This tobacco irritation may lead to the formation of white patches (leucoplakia) or ulcers, or thickening of the mucous membrane. Cancer at any time may develop in these areas of irritation.

All of these precancerous lesions, tumors, unhealed ulcers, areas of chronic irritation and inflammation of the skin and mucous membrane are recognized by their hosts the moment they begin. Delay in treatment is due to ignorance, fear or skepticism.

Any treatment which does not completely remove the little tumor, accomplish healing of the ulcer, completely excise the ulcer or stop the irritation of the skin or mucous membrane, or any treatment which does not completely excise the ulcer the result of the irritation, is more dangerous than no treatment at all. In this stage good surgery should give a hundred per cent. of cures. Bad treatment is dangerous. Far better to delay for good treatment than subject oneself to bad treatment in this stage.

Bad treatment is incomplete removal of the little tumor or ulcer, or irritating treatment which does not completely destroy the cells in the tumor, ulcer or area of irritation. Such irritating treatments are application of caustics, curetting, improper use of the x-ray and radium, and carbon dioxide snow.

These precancerous lesions may in some cases be completely destroyed by the application of caustics or caustic salves, curetting or x-ray or radium, but with such treatment a piece is rarely if ever saved for microscopic study. This treatment is dangerous, first, because it may be incomplete; second, there should always be a microscopic study of a piece of the precancerous lesions, because in some cases cancer develops very quickly and can only be recognized with the microscope.

Precancerous lesions in the internal organs are difficult to demonstrate and will not be discussed in this paper, but I agree with William and Charles Mayo and others, that gastric ulcer and the chronic irritation of gallstones and inflammation of the gallbladder should be looked upon as precancerous lesions and lead to appropriate surgical treatment in the earliest stage of the disease. This treatment will be indicated by what the patients complain of because rarely, if ever, can a tumor or ulcer be felt.

The great hope for increasing the number of cures and decreasing the number of deaths from cancer lies in the education of the public and the profession on the significance and potential danger of the precancerous lesion; in the education of the surgeon as to the best surgery and the education of the surgeon and the pathologist as to the recognition of the earliest stage of the beginning of cancer in the benign, precancerous lesion.

The excision of the precancerous lesion has the great advantage of allowing a microscopic study. There is no other way of excluding the possibility of cancer. The short duration of the precancerous lesion does not exclude nor does its long duration indicate cancer.

The microscopic investigation not only leads to a decision whether it be cancer or not but also to the type of cancer. These microscopic diagnoses in the precancerous lesion—benign, early, and type of cancer lead to immediate operation which in some cases are radically different for the benign, the cancer and for the different types of cancer.

Any treatment, therefore, which does not permit the examination of a microscopic section is not devoid of danger and is not the best treatment. The best results in the precancerous stage, where the factor of the duration of the disease is controlled, rests upon good surgery and good pathologic diagnosis.

RELATION OF THE X-RAY SPECIALIST TO THE MEDICAL PROFESSION.*

By E. F. Tucker, M. D.,
PORTLAND, ORE.

Ever since the surgeon divorced himself from the barber and started the medical profession, that profession has at different times conceived and given birth to an infant specialty. The infant has received the care and protection from its mother to which it was entitled and, even when well grown and well nourished and apparently able to stand on its feet alone, it has always maintained allegiance to the parent household and received no inconsiderable support from that source.

One of its most recent offsprings is the x-ray infant, for whose existence there is not only every reason, but indeed a great demand in every community; a specialty which should be of the greatest assistance to the general profession and an almost absolute necessity in these days of refined diagnosis. The general practitioner, himself, can ill afford to maintain a modern x-ray laboratory, nor is he likely to acquire the technical skill which is so necessary to bring about the best results in this kind of work. I do not know of any specialty which should be more intimately associated with, or dependent upon the profession at large than this, in order that the greatest benefit may accrue to all. At times, however, I have feared that the advantages offered by this form of diagnosis might prove a boomerang, and assume the appearance of a menace to the profession, if we do not bring about some general ethical understanding between the x-ray specialist and the general practitioner to serve as a basis on which this work should be carried out.

It has always been considered unethical for one physician to see or examine the patient of another without the consent of the latter. This has led to the consultation. I believe it is still more unethical for the consultant to express directly to the patient his opinion of the case; his duty being to give his opinion to the physician in charge and to permit him in his presence to transmit such opinion to the patient or the patient's friends. But meanest of all has that man ever been considered who voluntarily expresses his opinion to the patient of another, behind his back, in derogatory or harmful manner and calculated to do injury.

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*Read before Portland City and County Medical Society, Portland, Ore., Jan. 7, 1914.

Several years ago my attention was first called in a very small way to what might happen. I had under my care a man who had received an injury from a fall and, although I could not make out any definite injury, as the man kept complaining of pain in the upper part of the chest, I sent him to an x-ray specialist, to whom I telephoned what was wanted. I also instructed the man to get the plate himself and bring it up to my office when it was finished. He did so and came in with a sacred look in his face, saying, "Doctor, there are no broken bones, but something much worse, I have consumption." "How do you know that?" said I. "The doctor who took the plate told me so. See," said he, and he placed the x-ray plate against the window and pointed out some slight opacities in the region of the mediastinum, saying, "Those are tuberculous glands." "Did you tell the doctor you were a locomotive fireman, and that you are constantly inhaling cinders and smoke?" I asked. "No," said he. "Well if you had," said I, "you would have saved him from making a fool of himself and of you."

If the x-ray specialist had telephoned me his suspicions instead of asserting his opinion to the patient, he might have rendered me a service instead of giving me the opportunity to place him in ridicule, which I felt I had a perfect right to do. But this occurrence, only one of several, is a slight one in comparison to many that are going on continually and which are giving that bird of carrion, the shyster lawyer, his long-looked-for opportunity. I refer to the practice of the x-ray specialist making plates for any one who may come to him who has suffered a recent fracture, in some cases still under the care of his physician and without his consent, handing such plates to the patient and pointing out to him defects that may or may not be present. These plates are often taken by the patient and shown to his friends, to other doctors, and the name of the poor physician in charge who is in complete ignorance of all this is bandied about in a manner which is bound to do him harm and is very likely to land him in the courts.

This is no fairy tale. During the past two years I have had a number of men come to my office, carrying x-ray plates under their arms for exhibition, and trying to get damning evidence with which to mulct the poor devil of a doctor who did the best he could for them, who listened to their call for help and answered it with his best healing powers, only to come to this kind of thing for a recompense. No matter what the injury may have been in the first place, no matter whether the patient obeyed or disobeyed instructions, no matter if the functional result be perfect; if the x-ray plates do not show a perfect anatomic result, when taken in every conceivable direction, then damn the doctor.

In a recent trial in this city, where a suit for damages was being brought against an employer in consequence of a fractured limb, an x-ray specialist swore in no uncertain terms as to the permanence of the injury, thus influencing the jury to award the most unreasonable damages I have ever heard of. I doubt very much if this x-ray specialist had ever diagnosed half a dozen fractures, tried to set them or taken care of them in his life. In other words, he had absolutely no right to testify as to clinical results. I took occasion to call the attention of one of our circuit judges to the injustice and danger of this kind of testimony and, after having explained it to him, he said that in the future he would instruct the jury as to what value they should place on testimony of this kind.

Now as to the remedy: The same rule of ethics should apply to the x-ray specialist as to any other specialist. None has any right to make an x-ray plate of any one else's patient and hand the same to him with or without comment, except at the special request of the patient's own physician. He has no right to volunteer information to the patient, beyond that which he was specifically requested to do but, should he discover in the plate any condition which he thinks may have been overlooked, it certainly becomes his duty to inform the physician of his discovery but to do so in a professional manner.

He certainly has the right to take all the x-ray plates he chooses of those who are under his care and are strictly his own patients, but of no others. Any man or woman who goes to an x-ray specialist of his own accord to have a plate made of a recent injury, on the face of it does so for no good purpose and should be refused.

I wish particularly to disclaim the least intention, on my part, to accuse any x-ray specialist of intentional wrong doing but I do feel there is occasion at this time to call the attention of the profession to the fact that, if we are not careful, if we do not come to some mutual understanding, there is great danger of one of the greatest aids to medical diagnosis being turned into one of the greatest menaces that can threaten us. The specialties in medicine are like the spokes in a wheel. They should be so well adjusted and so well placed, that nothing can interfere with their advance and progress.

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EDITORIAL

THE LEGAL PRACTITIONER AND THE WASHINGTON INDUSTRIAL COMMISSION.

A curious and anomalous condition of the legal practitioner in Washington has developed in connection with the administration of the Industrial Insurance Act. The law requires that awards for injuries to workmen shall be determined by the extent of the injuries received, based upon the reports of the attending physicians. One would naturally assume and it has always been considered that the attending physician in this case is a legally qualified, licensed physician of the state. Such in fact are the only physicians recognized by the law. They alone are qualified and permitted to sign death certificates or to act in any legal capacity. An investigation recently made of reports passed on by the Industrial Commission shows that during the period of its existence reports of injuries have been received and acted upon from over ninety illegal and unlicensed physicians in the state, some of whom have been rejected by the Examining Board on account of having no diplomas, others on account of inability to pass an examination, while others have never appeared before the board to secure licenses. It is demanded and insisted by the Industrial Commission that the attending physician be required to make his report of an injured workman, even though he receive no compensation for such services. The Attorney General has stated in discussing this question that such requirement is likewise to be demanded of these illegal practitioners who have no legal standing whatever. In other words, we have the extraordinary and contradictory ruling of an official of the state that the Industrial Commission must require a man to perform an illegal act by compelling an illegal practitioner to perform the legal medical act of reporting the condition of an injured workman, at the same time exposing him to prosecution on the part of the Medical Examining Board for performing this illegal requirement, which action the board is likewise required to take. Was there ever presented to the citizens of a great state a more ridiculous and laughable opera-bouffe exhibition than this? The situation was further complicated by the fact that, when the Attorney General was requested to define the term attending physician in its relation to industrial insurance, the state board of health and life insurance examinations, he bluntly refused to reply, thus leaving the legal relation between the physicians and Industrial Commission in the same uncertain condition.

It is evident to any thoughtful observer that the Industrial Insurance Commission has committed a grave error in the past by accepting and passing on the reports of these illegal practitioners of medicine. It is not contended that necessarily unjust awards have been made to the injured employees, although it is perfectly evident that a man incompetent to obtain a license to practise medicine may very likely for the same reason be incompetent justly to estimate the extent of a man's injury and the proper period of his disability. If the policy is to be followed of accepting the opinion of any man who treats an injury, regardless of whether or not he possesses the efficient knowledge of a physician, of what value is the law requiring any medical inspection in connection with the work of the Industrial Commission? The medical features of the work might as well be entirely eliminated and the commission be permitted to carry on its work without medical advice or assistance of any sort. Furthermore, if the contention of the Attorney General be sustained, that the tax payers' money can be expended for injuries reported by uneducated medical attendants, the Medical Practice Act, in its efforts to protect the health, lives and property of the citizens of the state, is absolutely without force and might well be abolished. As the situation now stands the law attempts to protect the welfare of the citizens as a whole by permitting only educated and qualified physicians to attend to their ills, while the state, in its treatment of those under its immediate protection and supervision, is satisfied totally to disregard these restrictions and to entrust this portion of its people to the dangers of inefficiency and ignorance. It is clear that the only consistent and rational course of action to be pursued by the Industrial Commission is to possess a register of the legally licensed physicians of the state, from whom alone should be accepted reports of the injuries of disabled employees.

IMPORTANT FEATURES OF THE RECENT CONFERENCE OF STATE SECRETARIES.

At a conference of state secretaries, held in Chicago, October, 1912, a report of which was given our readers at the time, several recommendations were adopted with the view of furthering the uniform regulation of membership in the various state associations; and recently the American Medical Association called a second conference at Chicago, Feb. 25, 1914, to receive reports from the secretaries as to the action taken by the various state associations on the recommendations made by the previous conference. Thirty-nine states were represented and a majority of these reported that their associations had adopted, or had taken steps to adopt, the essential features of those recommendations. The calendar year is now the fiscal year in most state and local societies and the plan of requiring members to pay their dues in advance, or at least within the first two months of the current year, has met with favorable action in many states.

It is easy to enforce payment of dues in advance in states where membership carries with it insurance against suits for malpractice but in other states it is not so easy. However, a number of these state associations are requiring prompt payment of dues and others reported proposed amendments to their by-laws looking to this end. When we consider that membership in the county or local society carries with it membership in the state and national associations, a free subscription to the official journal of the state association, and virtually makes the member a Fellow of the American Medical Association, if he be a subscriber to the *A. M. A. Journal*, it seems no more than just and fair to all concerned that he be required to pay his local society dues at the beginning of the fiscal year instead of any old time or never, and that his membership cease automatically at the expiration of the time paid for.

The subject of transfer of membership from one local society to another or from one state to another brought forth extended discussion at both conferences but it seems impossible for the states to get together on this subject. Several of the associations, particularly in the South, have taken a firm stand against transfer of membership by card, claiming, and rightly, too, that the local society should be the sole judge of character of its members. It is, therefore, extremely doubtful if a uniform transfer of membership will ever be accepted by all of the state associations. The resolutions introduced by Dr. W. R. Townsend, of New York, to meet certain economic problems which the profession must face, notably the workingmen's liability acts and the income tax, were adopted and referred to the proper agencies of the American Medical Association with the recommendation that they be given due and full consideration at an early date, in order that the interests of the profession may be protected and the members thereof instructed as to their duties and rights.

The conference also went on record as favoring an annual meeting of the state secretaries at the same time and place as annual meeting of the American Medical Association, and that provision should be made in the association's laws to meet the actual travelling expenses of secretaries and delegates in attending the annual meetings. Appreciation must be expressed of the royal manner in which Dr. Craig and other members of the Journal office entertained the visiting secretaries, although space will not allow going into details. E. E. M.

RELIEF FROM THE BURDEN OF THE STATE INSANE.

One of the most appalling facts observed in our modern social life is the continual and tremendous increase in the number of the insane. Only those familiar with the courts having to do with the commitment of these patients can appreciate the horde of unfortunates daily passing from private life to the care of the state in its institutions for the insane. This burden is increasing to such an extent that in many of the states, like New York, it is the largest single item of the state's expenditures. How to overcome and lessen this increasing burden is a constant source of inquiry among our officials and legislators. A plan to relieve the situation, embodied in a bill which passed the last session of the New York legislature, is described by Dr. T. W. Salmon in the January issue of *The Survey*. It has already been adopted in some states and is worthy of consideration by all. This measure consists in the establishment of out-patient departments of each state hospital in cities tributary to it. To the care of these are entrusted the convalescents who are paroled when they have reached such a stage of improvement as to be referred to their friends. The paroling of patients has long been customary under existing conditions, but it is well known that in most cases they are never again observed by the hospital authorities until recommitted for some subsequent offense. Under the new plan the patients are continued under the immediate supervision of the hospital authorities who have charge of the different out-patient departments in their districts. They are required to make daily or periodic visits to the out-patient department for treatment and advice, while the expense of their maintenance is borne by their friends at home. In a large proportion of the cases this care is feasible and will, therefore, relieve the state of an enormous expenditure, while the patients themselves may be much improved by congenial home surroundings and dismissal from the state institution. The second great benefit to be derived from this plan is the early treatment of cases by the state physicians, thereby offering the opportunity of checking some cases in their incipient stages. These out-patient departments will thus take the place of the detention hospitals for incipient cases which have been proposed in the past. The existence of these branch institutions of the state hospitals being known to the public will serve as an incentive for the examination and treatment of friends who have become "queer" and whose mental stability is suspected, thus avoiding the formal court examination and sentence to the insane asylum, so much feared by the public. That some measure of this kind is a necessity in the states of the Northwest is well known by those who have paid any thought to the matter and this particular measure of relief is well worth the consideration of those having at heart the best interests of our unfortunates who are afflicted with mental disease.

FORGERY UNDER THE MEDICAL PRACTICE ACT.

In the year 1901, H. K. Lum obtained a license to practise by examination from the Washington Examining Board. He registered the license for Snohomish County in Everett and practised for several years in that city. In 1908 he moved to an Eastern city where he resided until last fall. In the year 1909 W. P. Stanley, who had studied medicine for a time, appeared in Seattle without occupation and, being unable to obtain a license from the Examining Board, went to Everett, presented himself as Lum and obtained a certificate of the registration of this man's license. This he registered for King County in Seattle and since that time has practised as Lum. He has figured as an understudy and the professional buffer for many quack advertisers, being the only survivor of the Akey outfit, when two other quack doctors were killed by an outraged patient. His anomalous position has been farther intensified by the fact that the real Lum returned to Washington about five months ago and thus two men have been practising under the one license. He was not disturbed in this easy game until about two months ago when the Examining Board discovered the circumstances under which he was masquerading, during its statewide campaign against illegal practitioners. He was then arrested and lodged in jail on the charge of forgery, in accordance with the following section of the medical practice act:

> Section 15. Every person filing for record, or attempting to file for record, the certificate issued to another, falsely claiming himself to be the person named in such certificate, or falsely claiming himself to be the person entitled to the same, shall be guilty of a felony, and, upon conviction thereof, shall be subject to such penalties as are provided by the laws of this state for the crime of forgery.

Since Stanley acknowledged his identity and admitted all the facts charged against him and there being additional evidence sufficient to prove the charge, it was assumed that his conviction would follow as a matter of course, but Judge Kenneth MacKintosh upset all calculations by ruling that his offence consisted simply in filing a fraudulent certificate in 1909 and, since the statute of limitations expired two years ago, at the present time he is committing no offence except a misdemeanor for having no license of his own. If Sec. 15, quoted above, has any meaning it surely intends to attack one so depraved as to practise under another's stolen identity, as well as merely certifying himself as this person. It does not seem possible that the supreme court, in reviewing this case, can uphold such a position.

THE ANNUAL MEETING OF THE PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

This year's annual meeting of this society will be held in Seattle July 1-3. The society embraces eligible members in the states west of the Rocky mountains and British Columbia. It is expected this will be one of the most largely attended and profitable meetings in the history of the society. The special guest for the meeting will be Col. Robert H. Elliott, of London, England, formerly of the Indian Medical Service, Superintendent of the Government Ophthalmic Hospital of Madras, and Professor of Ophthalmology in the Medical College, Madras, India. He will deliver an address and demonstrate his operative methods, including his trephining operation for glaucoma. Other well-known surgeons will also be in attendance. The officials and committees of the society extend a cordial invitation to all ophthalmologists, and oto-laryngologists to attend this Seattle meeting.

NOTICE.

The following amendment is proposed to the constitution of the Utah State Medical Association to be voted on at its next annual meeting:

ARTICLE IX.—OFFICERS.

Sec. 2. After the word Councilors insert "and Secretary (who shall be elected for three years)."

W. BROWN EWING, Secretary.

MEDICAL NOTES

OREGON.

Prevention of Blindness. The president of the Oregon State Medical Association, Dr. Calvin S. White, recently appointed a Commission for the Conservation of Vision and the Prevention of Blindness, composed of the following ophthalmologists: President of the association, honorary chairman; J. L. McCool, Portland, chairman; J. F. Dickson, Portland; C. M. Pearce, Baker City; W. L. Wood, Portland; J. J. Emmons, Medford; F. B. Eaton, Portland; J. M. Waugh, Hood River; George Ainslee, Portland; R. A. Fenton, Portland.

This commission is empowered to appoint an advisory commission which shall consist of an educator, an architect, a railroad official, a representative of the press, a lumberman, an illuminating engineer, a banker, a merchant and the superintendent of the School for the Blind.. The chairman of the commission is also the manager of the Oregon Bureau for the Conservation of Vision of the American Medical Associaton and it is the intention of the commission to cooperate with this bureau in furthering this very important movement.

Study of Health Departments. Dr. Marcellus, of Portland, has returned from an extensive trip through the East, where he has been studying health departments for the purpose of installing new features in the health department of his own city.

School for the Blind. The School Board of Portland has decided to establish a day school for the blind. The school will be located in one of the rooms of the Trade School.

Dr. Rufus H. Hagood has resigned his position as assistant at the Eastern Oregon State Hospital and has left for Philadelphia. He will enter the Army Medical School in October.

Dr. Ralph Dodson, son of Dr. O. M. Dodson, of Baker City, who finishes his course at Johns Hopkins this year, has won first place in a competitive examination for internship in Bellevue Hospital, New York.

Dr. William Kuykendall and family, of Eugene, have left for San Francisco. They will make an extensive trip through the East, where Dr. Kuykendall will visit the larger hospitals and clinics.

Dr. Merrill C. Fox has moved from Florence to Lakeview, where he will engage in practice.

Dr. Arthur McCown, of Vancouver, Wash., was married to Miss Jean Bagnell, of Portland, early in March.

Dr. W. S. Johnson, of Bonanza, has suffered a severe mental collapse from overwork and worry.

WASHINGTON.

Seattle Obstetrical and Gynecological Society. The program of the last meeting was devoted to the Abderhalden serum diagnosis of pregnancy. Dr. Neu read a paper laying down the scientific basis for the test and abstracting from various foreign authors. This was followed by the guest of the evening, Dr. C. Stuart Wilson, of Tacoma, who related his personal experiences with the test and described his technic in detail. He then demonstrated the reaction.

New Hospital at Seabold. A hospital will be built on Bainbridge Island in the near future, the probable location being Seabold. This will be the first hospital facilities in that section.

Victim of Leprosy. Dr. E. R. Kelley, State Health Commissioner, has reported a case of leprosy in a Finlander named Katajisto, in Lewis County. The government has refused to take him at the Diamond Head Quarantine Station, and he cannot be admitted to the leper hospitals in Massachusetts, Louisiana or to the leper colony at Molokai, so it will be necessary for him to be isolated at his home.

New Seattle Health Commissioner. As soon as Mayor H. C. Gill entered office, he promptly relieved Dr. J. E. Crichton of the office of Health Commissioner, which he has filled for six years. Dr. J. S. McBride was appointed to fill the vacancy.

Hospital Appointment. Miss May Walker, formerly of Seattle, who finishes this year her medical course at Cornell Medical College, New York, has won the high honor of being one of the first two women to be appointed to the position of intern in Bellevue Hospital.

Typhoid Immunization. The State Board of Health has recommended that all inmates of state institutions, with the exception of the Old Soldiers Home, be immunized against typhoid. This recommendation follows the successful use ow typhoid vaccine during the Centralia epdemic.

Tuberculosis Sanatorium at Spokane. The Spokane County Commissioners have decided to build a tuberculosis sanatorium and take advantage of the state law for the aid of such institutions.

A New Tuberculosis Sanatorium. The United States Government has appropriated $25,000 for a tuberculosis sanatorium for the Indians of the Coeur d'Alene Reservation.

Addition to Hospital. One thousand dollars has been given by C. W. Johnson, of Colfax, to be used in building an addition to the St. Ignatius Hospital in that city.

Member of Charter Commission. At the recent Seattle city election, Dr. J. B. Eagleson was elected a member of the freeholders convention to form a new city charter. He received the second highest number of votes among the fifteen members of the commission.

A Patriotic President. At the recent annual meeting, Dr. S. J. Holmes, of Seattle, was elected president of the Washington Society Sons of the American Revolution.

Dr. C. E. Eaton, of Seattle, had a narrow escape from death recently when his machine collided with another machine going at a high rate of speed on Westlake Boulevard.

Dr. G. F. Midford, who has been practising in Port Townsend for several years, expects to leave for Alaska in the spring. He will probably locate on Douglas Island.

Dr. Carl Greiff, who has spent several years in study in Germany and later practised in South Australia, has decided to locate in Everett.

Dr. C. S. Rhodes, who has been the physician for the Spokane Indian Reservation, has resigned.

Dr. J. K. O'Neil, formerly house physician at the Kent Hospital, has located in Auburn.

Dr. C. E. Wilson, formerly of Eugene, Ore., has located in Tenino.

OBITUARIES.

Dr. Winston Appleby died at Anacortes, Wash., Feb. 16, from a stroke of apoplexy. He was born at La Fayette, Ala., in 1868. Most of his youth was spent in Texas. In 1890 he moved to Bellingham, Wash., where he worked for one year in a drugstore. He then went East and graduated from the St. Louis Medical College, and did postgraduate work in New York, Chicago and San Francisco. He practised medicine for eight years in La Conner, when he moved to Anacortes, where he practised until the time of his death.

Dr. Stacey Hemenway died Feb. 19, at the Yainax agency, on the Klamath Indian Reservation, in Oregon. He was born at Pleasant Township, La Port County, Ind., in 1836. That year he moved to Wisconsin Territory, where he remained for thirteen years. Then he lived in Iowa for four years and in 1853 came West with his father to the Willamette Valley. His early education was obtained in the schools of Wisconsin, Iowa and Oregon. In 1859 he returned to the Atlantic Coast via Panama and graduated from the Chicago Medical College in 1862. At once he enlisted in the civil war as surgeon in the Ninth Illinois Cavalry. During his service in the army he was advanced at different times until at the close of the war he held the rank of regimental surgeon. Following the war he served for three years as physician for the asylum for the insane at Steilacoom, Washington Territory; then for about five years he was acting surgeon of the United States Army. He moved to Klamath in the early 80's and practised for a time in that vicinity. In 1889 he entered the Indian service, since which time he has been stationed on the Klamath Reservation. He was well known in that part of Oregon and had a large circle of friends.

Dr. J. F. Hurlbut died Feb. 22, at Lewiston, Ida., from chronic Bright's disease. He was born at Delton, Wis., in 1861, spending his boyhood in that neighborhood. He graduated from the Hahnemann Medical College, of Chicago, in 1885, and began to practise at Duluth, Minn. In 1892 he moved to Arcata, Cal., and practised for two years. Later he resided at Mountain View, Cal., and in 1901 graduated from the College of Physicians and Surgeons at San Francisco. In 1903 he moved to Lewiston, Ida., where he practised until the time of his death. He was a man of fine qualities and his death is deeply felt by his many friends in Lewiston

REPORTS OF SOCIETY MEETINGS

KING COUNTY MEDICAL SOCIETY.

Prest., D. H. Palmer, M. D.; Secty., G. W. Swift, M. D.

The regular semi-monthly meeting of the King County Medical Society was held in Seattle, Wash., March 2, 1914. The meeting was called to order by the president, Dr. D. H. Palmer, at 8 o'clock, 86 members being present.

Program.

Comments on the Work of the Department of Health Under the Supervision of the Chief Medical Inspector. By C. F. Davidson.

The Tuberculosis Division of the Department of Health. By R. M. Stith, in charge of the Seattle tuberculosis work.

General Survey of Health Activity. By J. E. Crichton, Seattle Commissioner of Health.

The address and papers were discussed by H. E. Kelley, J. B. Lloyd, Carl Neu, H. J. Davidson, F. S. Bourns.

C. S. Leede and E. A. Layton were elected to membership.

The second semi-monthly meeting of the society was held March 16. The meeting was called to order by the president, D. H. Palmer, 109 members being present.

PAPERS.

Ether Anesthesia. By G. L. Closson. Discussion by Mildred Purman, W. C. Lippncott, Alfred Raymond and C. A. Smith.

Gas Anesthesia. By H. L. Geary. Discussion by G. G. Thompson, H. J. Davidson and A. E. Burns.

Clinical Cases.

Fracture Surgical Neck of Femur. By Fred J. Fassett.

Split Fracture of Ulna. By A. E. Gerhardt.

Applications for membership were read from Drs. Mabel Seagrave, R. France and Richard Lyon.

R. P. Smith moved that the Washington delegates to the A. M. A. be instructed to use every honorable means to secure the next meeting of the A. M. A. for Seattle. Seconded and carried.

Moved by R. P. Smith and seconded by J. C. Snyder that the secretary notify the members of the Washington delegation in the United States Senate that the King County Medical Society endorses the amendment of the Hon. Lathrop Brown to the immigration bill pending, and requests them to use their influence in obtaining its adoption. Dr. Smith explained the purpose of the amendment and urged the adoption of his motion. After discussion and the presentation of several amendments that were defeated, the original motion was carried.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Prest., R. W. Perry, M D.; Secty., E. B. Burwell, M. D.

The regular meeting of the academy was held at the office of the president, Dr. R. W. Perry, at Seattle, Wash., following a dinner at the Hotel Savoy, with the following members present: Drs. Adams, Burns, Burwell, Dowling, Hawley, Hoffman, Perry, Plummer, Pontius, Stillson, Stubbs, Swift, Wanamaker, Wing, Findley. Visitor: Dr. Trowbridge.

Clinical Cases.

Partial Ophthalmoplegia Interna. By Dr. Wing, of Tacoma. Barber, age 40. The condition came on suddenly during the night several months ago and has remained ever since. No venereal history except gonorrhea 20 years ago. No headache or vertigo.

V. O. D. = 20/40 with + 0.50s = 20/20 + V. O. S. = 20/30 with + 0.50s = 20/20 + Muscle balance O. K.

At first with + 2.25s both eyes, could work and read. Now with + 1.50 both eyes, can work. Examined by a neurologist who found nothing abnormal.

Ophthalmoscope negative. Treatment was K. I. to saturation with no effect in six months.

Sodium salycilate and strychnin to the limit. Dr. Wing wished opinions as to the etiology in this case.

Dr. Swift said that syphilis was usual cause. Has a similar case at the City Hospital in which no cause was ascertained. These cases are sometimes due to ptomain poisoning or autointoxication. Thinks this case may be due to this cause. Dr. Pontius agreed with Dr. Swift. Dr. Perry said that all cases he has seen have been postdiphtheritic.

Injury of Eye. By Dr. Burns. Man, age 36, three years ago was struck in the left eye by pieces of iron. Sight gradually failed and four months after injury he was totally blind from a traumatic cataract in the left eye. Vision commenced to fail in right eye about a year ago. This eye showed an edema and exudation of the nerve head and considerable edema of the surrounding retina.

Dr. Burwell considered the case one of a low-grade of detachment and advised rest in bed, pilocarpin, sweats and general eliminative treatment. Dr. Burns, in closing, considered it a hopeless case, but said treatment would be instituted and a further report made.

Opacity of Cornea By Dr. Wing. Woman, age 77, with opaque spot the size of a pin head in center of cornea. Did not stain. Gave atropin and hot fomentations. Returned in a few days with opacity denser and condition worse. The cornea now began to bulge until a well developed conical cornea was present. Made two saernisch sections with no result and finally burned a hole in the center of the cone with the galvanocautery, which resulted in a cure. This was to be taken as a rare condition of conical cornea due to an inflammatory condition.

Case of Pearl Cyst. By Dr. Stillson. Japanese, age 33. One year ago was struck on left eye by a flying nail-head. Did not penetrate, but resulted in blindness. Two weeks ago was struck on the same eye by a flying nail-head which did not penetrate. Present status, lids swollen, conjunctiva and sclera injected. Tension + 2. Cornea clear, anterior chamber deep, lower one-third filled with cholesterin crystals which glisten with golden iridescence, fly up in a cloud when the eye is oscillated and gravitate when the head is inclined. In the lower quadrant of the iris are a few bright, berry-like nodules, bathing which is a layer of reddish serum. Iris totally adherent to capsule at pupillary margin. Shakes when eye is moved and is partially atrophied. Vision nil. Later the cholesterin crystals cling to the iris, the pain has disappeared and the eye is soft. Dr. Stillson considers that at the first trauma a "pearl cyst" was formed which at the last trauma ruptured anteriorly and liberated cholesterin into the anterior chamber. Dr. Wing and Dr. Burwell thought that the cholesterin crystals came from the vitreous.

Paper.

Stomatitis Ulcero-Membranosa or Angina of Plaut Vincent. By Dr. Wanamaker. Discussed by Dr. Pontius.

Dr. H. B. Thompson gave a demonstration of Sweet's latest apparatus and method for accurately locating foreign bodies in the eye.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Practical Sanitation. A Hand Book for Health Officers and Practitioners of Medicine. By Fletcher Gardner, M. D., Health Commissioner of Monroe County, Indiana, etc., and Jas. Persons Simonds, M. D., Prof. of Preventive Medicine, University of Texas, etc. 400 pages illustrated; price $4.00. Published by C. V. Mosby Company, St. Louis, 1913.

If any physician purchases this work with the expectation of finding therein exhaustive discussions of the yet unsettled questions of public hygiene, he is doomed to disappointment. But the authors have very candidly explained at the outset the scope and limitations of the work. "Since this book is written for the busy practitioner, who has neither time nor opportunity to weigh the relative merits of different measures in times of epidemic, the means herein recommended will be those that are found safest and, so far as possible, are simplified so that the lay health officer or school official may understand." Throughout it is evident that the authors have tried to lay emphasis upon the practical. Chapter 4, "Isolation Hospitals and Camps," is a good, brief discussion of this important though fortunately not frequently necessary emergency public health measure. Chapters XX to XXIII deal with vital statistics. This is the most practical exposition of actual vital statistics procedure and of correct vital statistical terminology that has ever come to our notice. Some might object to the utilization of 27 pages in such an avowedly condensed work for the reprinting of the international list of causes of death and list of undesirable terms, but practical health officials who have to contend daily with the troubles arising from the almost total ignorance of the profession of these admirable lists, will consider the space most wisely utilized. One must express some scepticism as to the wisdom of the grouping that is employed in the heading of the chapters on epidemiology. The authors make a rather striking, not to say astonishing, division of the infectious diseases into "The Typhoid Group," "The Plague Group," "The Tuberculosis Group," "The Ringworm Group," etc. This grouping will most certainly lead to confusion in the mind of the lay reader. In certain of the chapters on sanitation the authors' general principle of condensation seems to have been pushed almost to the vanishing point. To dispose of the entire subject of sewage in a little over two pages, and the subject of garbage in a little more than one page, is disposing of troublesome subjects with an ease and celerity which the health officer will envy from the bottom of his soul, but he will not find much mental pabulum to feed upon when he seeks inspiration from the work relative to the solution of his own sewage and garbage problems.

Kelley.

Diseases of the Heart. By James Mackenzie, M. D., F. R. C. P., LL.D., Ab. and Ed., F. R. C. P. I. (Hon.) Physician to the London Hospital, Consulting Physician to the Victoria Hospital, Burnley. Third edition; 502 pages. Oxford University Press, 35 West Thirty-second Street, New York.

The author has given the most modern stand of our knowledge concerning heart disease. He has made extensive use of the electrocardiographic method and by his very minute study of the tracings has made great progress in analyzing the phenomena of heart irregularities and especially those of the antrum. For the interpretation of electrocardiographic tracings this book will be of great value. The writer's theory, that all distress from the heart is caused by lack or exhaustion of the reserve force of the heart muscle, is very fertile and accounts for the fact that the complex of symptoms, known as angina pectoris, is caused by numerous conditions of the heart, as lack of blood supply to the heart muscles, due to alterations of the arteries as spasm sclerosis, or serous duct aortic conditions, or due to general anemic conditions. The disease of the heart muscles itself may result from overstrain as myocarditis, myodengeneration, fatty infiltrations, tumors, etc. Then purely nervous conditions as attacks of angina pectoris can occur at all ages with or without recognizable alterations of the heart, with high or low pressure. The periodical and referred pain is due to the exhaustion and ischemic condition of the tired muscle which aches just as any other muscle of the body under similar condition. Another important fact the author emphasizes is that high blood-pressure is a favorable condition, by which the body tries to uphold an adequate blood-supply under otherwise unfavorable conditions. We should, therefore, only interfere when extreme conditions prevail. In all cases of lack of reserve force the writer advises prolonged rest and sleep, brought about by good doses of ammonia bromide, also the use of stimulants as coffee and digitalis.

Leede.

Infections of the Hand. A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M. D., Assistant Professor of Surgery, Northwestern University Medical School, Chicago. New (2nd) edition, thoroughly revised. Octavo, 463 pages, with 147 illustrations. Cloth, $3.75, net. Lea & Febiger, Philadelphia and New York, 1914.

But little has been added to improve the second edition of this original work over the valuable and practical guide it has been ever since the appearance of the first edition. The scope of the subject treats with every phase of acute infection from the simple, localized to the deep-seated graver types. The sixteen additional pages are chiefly in the form of a short resume at the end of various chapters, giving in a concise manner, and for ready reference, the essentials of the preceding chapter. Helpful illustrations profusely adorn the text. Especially are the original, anatomic dissections a decided adjunct in pointing out the location of serious and destructive pathologic processes, clearly indicating the proper site for surgical attack. It is by far the most valuable contribution at our disposal as a practical guide to the diagnosis and treatment of acute and chronic affections of the hand and forearm. It cannot be too highly recommended to the general practitioner, as well as the surgeon, as a distinct result-achieving advancement over practically all of the former surgical methods of treating this class of infections. DUDLEY.

The Unexpurgated Case Against Woman's Suffrage. By Sir Almoth E. Wright, M. D., F. R. S. Cloth, 188 pages, $1.00 net. Paul B. Hoeber, Publisher, 69 East Fifty-ninth Street, New York, 1913.

It is truly inspiring to see a man of Sir Almoth's eminent position in the medical profession show such public spirit, wide cultivation and knowledge of history, philosophy and legal principles as are evidenced in this disquisition. He approaches the subject with a dispassionate and judicial spirit and his logical analysis leaves one in admiration and female suffrage in rags. That the English case is different from ours is demonstrated and, if parliament is dynamited into giving women the vote, constant friction will follow and not the familiar voting affair, as in this country. Sir Almoth contends with great reason and a host of facts that women are physiologically, physically, mentally, morally and socially unfit for the ballot and for taking man's place in society. He is a trenchant writer and never calls a spade by any other name. The book is a model in its physical attractiveness. WINSLOW.

Nervous and Mental Diseases. Practical Medical Series, Vol. X, Series 1913. Edited by Hugh T. Patrick, M. D., and Peter Bassoe, M. D. $1.35. The Year Book Publishers, Chicago.

The literature of the past year has been particularly full on the subject of laboratory work and the use of serum in the treatment of diseases of the spinal cord. Dr. Pierce Bailey's article on the influence of suggestion in producing hysteria and neurasthenia following injuries is one of the very interesting articles reviewed. Criticism of the German schools on psycho-analysis is reported By far the larger part of this work is occupied by nervous diseases. Yet many good articles are to be found on mental diseases. The standing of the editors is sufficient guarantee as to the thoroughness with which the literature on this subject is reviewed in this work. NICHOLSON.

Diagnostic Methods. A Guide for History Taking, Making of Routine Physical Examinations and the Usual Laboratory Tests Necessary for Students in Clinical Pathology, Hospital Internes and Practising Physicians. By Herbert Thomas Brooks, A. B., M. D., Professor of Pathology, University of Tennessee, College of Medicine, Memphis. Tennessee. Second Edition, Revised and Rewritten, with 82 pages. Cloth, $1.00 net. C. V. Mosby Company, Publishers, St. Louis, 1914.

A useful little book containing all the most recent tests and important tests of all the secretions and excretions, blood, etc. The work begins with a most painstaking description of a proper physical examination. The book is written for students, hospital internes and physicians.

Lectures on Medical Electricity to Nurses. An illustrated manual by J. Delpratt Harris, M. D., Durh., M. R. C. S., Senior Surgeon and Honorary Medical Officer in Charge of the Electrical Department, Royal Devon and Exeter Hospital. Cloth, $1.00 net; 88 pages, with 23 illustrations. Paul B. Hoeber, Publisher, 69 East Fifty-ninth Street, New York, 1913.

One of the most difficult subjects imaginable to present to nurses. The book has a limited applicaton to trained nurses who wish employment in this special line of work in hospital or private practice. The book is plain and the result instructive.

A Compend of Diseases of the Skin. By Jay F. Schamberg, A. B., M. D., Professor of Diseases of the Skin, Philadelphia Polyclinic and College for Graduates in Medicine, etc; Fifth Edition, Revised and Enlarged; 302 pages, with 112 illustrations; cloth, $1.25 net. P. Blakiston's Son & Co., Publishers, 1012 Walnut Street, Philadelphia, 1913.

This is one of Blakiston's Quiz Compends, so well known in their brown covers to the students and physicians preparing for examinations. It is an excellent one, as Schamberg's name would imply.

A Compend of Histology. By Henry Erdmann Radasch, M.Sc., M. D., Assistant Professor of Histology and Embryology in the Jefferson Medical College. Third Edition, Revised and Enlarged with 111 illustrations. Cloth, 363 pages, $1.25 net. P. Blakiston's Son & Co., Publishers, 1012 Walnut Street, Philadelphia, 1912.

This is another of Blakiston's Quiz Compends and is already familiar, being in its third edition. It is fuller than most books of its kind and especially in regard to embryology necessary to a thorough knowledge of structures.

Lectures on Tuberculosis to Nurses. Based on a Course Delivered to the Queen Victoria Jubilee Nurses. By Olliver Bruce, M. R C. S., L. R. C. P., Joint Tuberculosis Officer, County of Essex, etc., etc; 134 pages, with illustrations. Cloth, $1.00 net. Paul B. Hoeber, Publisher, 69 East Fifty-ninth Street, New York, 1913.

These lectures show a broad knowledge of the subject and the nurses were indeed fortunate to be able to hear them, as anyone may by means of this little book.

The Elements of Bandaging and the Treatment of Fractures and Dislocations. By Williams Rankin, M. A., M. B., Ch.B., Dispensary Surgeon Western Infirmary, Glasgow, etc. Cloth, 116 pages, with sixty-eight original illustrations. Price, $1.50. Published by Oxford University Press, 35 West Thirty-second Street, New York.

The author is unusually gifted in the matter of simple and lucid description and has moreover the ability to select the essentials of his subject. The book is an admirable one for students.

Anatomy and Director in Abstract. By Stewart L. McCurdy, A. M., M. D., Prof. Anatomy and Surgery, University Pittsburg, etc. Flexible leather, narrow pocket size, 372 pp, $1.00. Medical Abstract Co., 8103 Jenkins Arcade Bldg., Pittsburg.

This is one of the most astonishing little works as regards the amount of information stowed into the minimum of space which we have seen. The book is filled with anatomical plates on glazed paper. For the price it should be the joy of students and would be an extremely useful remembrancer for the physician to carry. It is in its 16th thousand. WINSLOW.

The Home Nurse. By E. B. Lowery, M. D., Author of "Herself," "Confidences," "Truths," etc. Cloth, 224 pages, $1.00. Forbes & Company, Publishers, Chicago, 1914.

A sensible book for the training of the woman having to act as a nurse for the family. A good book for the mother of a real family.

NORTHWEST MEDICINE

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ORIGINAL CONTRIBUTIONS

RECOVERABILITY OF THE INSANE.*

By WILLIAM HOUSE, M. D.,
PORTLAND, ORE.

The question of recoverability of the insane is one of general importance and interest, on which common knowledge is limited. To state that a person is insane is many times to imply that for him all hope is lost and to seem to consign him to an asylum for life. Because of the widespread popular belief in the general hopelessness of the great group of disorders to which the term insanity is applied, many persons suffering from one or the other of these afflictions are deprived of the possible benefits of rational treatment.

On the one hand, victims of temporary psychoses may be confined in asylums who would recover better under private care. On the other hand, and of far greater frequency, is the dread of placing patients who most need it under asylum care. This may militate against recovery. Because insanity is regarded by the public as a hopeless condition people are loath to believe their friends or relatives who are ill, even with obvious mental disorders, are insane. They rebel against the diagnosis of insanity until the patient commits some act which appears to endanger his welfare or the welfare of those about him.

We still insist upon arrest and confinement of insane persons, pending examination and the arrival of asylum attendants, in jail, where we house them with criminals and, inferentially, class them as criminals. When an insane person awaiting examination or removal to the asylum becomes noisy or excited and yells or sings behind his prison bars the newspapers write of him as they might of a debased criminal, not in a spirit of sympathy, but often in an unkind and ungenerous manner that may later hold him up as an object of derision to his friends.

It is, therefore, not surprising that the public retains many half barbaric ideas as to the nature of insanity and that it continues to look upon our asylums as institutions over the entrance of which one might well inscribe, "All hope abandon, Ye who enter here." Accordingly the diagnosis of insanity is often regarded as a covert insult by the family of the patient. To a lesser degree physicians share the general view of insanity. To many doctors the diagnosis of insanity is almost equivalent to a stigma of criminality and implies a hopeless or nearly hopeless prognosis.

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*Read before the Twenty-ninth Annual Meeting of Oregon State Medical Association, Medford, Ore., Sept. 19, 1914.

All this is wrong. All insanities are by no means hopeless. The prognosis in certain forms of insanity is as good as or better than is that in many of the more common disorders such as pneumonia and the various infectious diseases. Could those which may be called pure insanities be separated from the general group, they would exhibit a very high recovery rate. Opposed to such are the mental degenerations and the insanities of organic origin, many of which are substantially without hope not only as to the recovery of reason but as to life itself.

From the standpoint of prognosis the insanities may be divided into the following groups:

I have purposely chosen a simple classification, one as free from technicalities as possible.

I. Developmental defects.	Idiocy. Imbecility. Feeblemindedness.
II. Organic phsychoses due to	Injury; fracture of skull, Apoplexy, thrombosis, embolism. Senility, arteriosclerosis, etc. Brain tumor, abscess. Brain syphilis, localized. Paresis.
III. Psychic degenerations.	Paranoia. Secondary dementias. Dementia precox.
IV. Toxic or functional neuroses such as (Sometimes organic)	Alcoholism. Epilepsy.
V. Ideational phsychoses.	Mania. Melancholia.

If a patient can be classified, prognosis is simplified.

GROUP I.

Group one is without hope so far as recovery is concerned. The best that can be said of it is that imbeciles and feebleminded persons may be benefited by educational methods. Feebleminded persons who owe their defects to thyroid disease (cretins) are often benefited by the use of thyroid extract. Brilliant results are sometimes obtained but, as the number of cretins is inconsiderable, they are relatively unimportant.

GROUP II.

The organic insanities improve or recover just as their special organic cause is susceptible of improvement or recovery.

Fracture of the skull many times causes mental disturbance. Several years ago I observed carefully a number of persons whose skulls were fractured and found that most of them experienced disturbances of the mind. In many of these the disturbances persisted for as long as three to six months and was especially noticeable when they were awakening from or going to sleep. A certain portion of such patients will not recover or, if they seem to recover, will be found on careful examination to exhibit mental weakness, or to have recurring attacks of mental instability.

Insanity following apoplexy will improve if the lesion which caused it be absorbed. Persons who are mentally unbalanced following apoplexy may, therefore, improve or even regain a comparatively normal mind. Nearly all patients who suffer from apoplexy become mentally unsound toward the end. Particularly is this true of those who have cerebral thrombosis. Mental disturbances then are of unfavorable significance. This is true also of senility which is often due to arteriosclerosis and which usually progresses to a fatal issue.

Psychoses due to brain tumor pursue the course of the tumor. If it be incurable (for example sarcoma), there is little hope for recovery. Conversely, if the growth be syphilitic, suitable medication may remove it and with it the mental symptoms which it produces. This particular phase is interesting and important, for differential diagnosis between localized brain tumor and syphilis permits of treatment that may restore a seemingly hopeless patient to comparatively normal health.

Finally, to the organic group belongs paresis. An end-result of syphilis paresis undoubtedly is. There are many who think that paresis is simply a disseminated form of brain syphilis. Many cases are being reported in which the triponema pallida was found in the brains of paretics and there are many rash and overenthusiastic individuals who believe that paresis can be cured by means of antisyphilitic treatment. But rest assured they are pursuing a false hope. A large number of competent men have treated paresis by means of every form of antisyphilitic treatment with the general result that in unmistakable cases treatment has done no good and, on the contrary, in many cases has seemed to hasten the inevitable end.

It is true that here and there an individual reports improvement or even recovery of a seemingly typical paretic patient. I have had this experience more than once, the most typical being that of a youthful syphilitic who exhibited nearly all the constitutional symptoms of paresis and whose mind was in a state of extravagant grandiose delusions, seemingly pathognomic in type, yet who fully recovered under mercurial treatment. There is no doubt in my mind that the condition was due to diffuse brain syphilis or possibly syphilitic toxemia, which untreated might have become paresis, but which was not paresis at the time of treatment.

The essential cause of paresis doubtless is syphilis. But added thereto must be actual secondary degenerative changes in the cells of the brain or cord or both, changes that, being degenerative, can never be restored to the normal and that must pursue with variable rapidity their inevitable course to a fatal termination.

The diagnosis of paresis having been positively made, naught remains to determine by way of prognosis save the probable duration. Roughly, those cases which present an excess of cerebral symptoms are relatively rapid, and usually live less than two and one-half years from the time diagnosis is possible. Many terminate in six or eight months.

Paretics in whom the symptoms began in the spine, i. e., the class often spoken of as taboparetics, progress more slowly than those in whom the symptoms are mainly cerebral from the onset. Occasionally such patients live as long as five or seven years after the disease can be definitely diagnosed.

GROUP III.

The psychic degenerations present little or no danger to life. Of these the purest, paranoia, is always slow, nearly always progressive, and always incurable. Paranoiacs sometimes seem to recover but this is apparent not real. Some paranoiacs learn to conceal their morbid thought processes and are able to live in the community without attracting undue attention. Many others benefit to an exceeding degree from confinement in an asylum, chiefly because of the discipline. When dismissed such patients for a time often pursue orderly careers, their minds kept in leash by fear of being returned to asylum walls. But with rare exceptions they are eventually returned to asylum custody, where their lives are often lengthened by the care they receive.

There are always a number of rudimentary paranoiacs who never reach the asylum, who are to be found in the ranks of various political or religious organizations and who are to be recognized by the "sure cure" or "cure all" nature of their projects. I think single tax and free public utilities claim a rather excessive number of advocates of this kind at this time, not because there is anything inherently wrong with these theories, but because they are of a positive nature and present attractive elements for the exercise of a kind of spurious logic which is attractive to the egoistic nature of paranoiad reasoners.

Secondary dementias are always incurable, slowly or rapidly progressive and tend to shorten life because they are conducive to neglect. They are end results of the acute insanities.

Dementia precox is an unfortunate title. In its essence it defines an incurable disorder, i. e., dementia. Substantially it means precocious dementia. In past years the theory of dementia (the medical not the legal theory) was loss of mind or degeneration of mental faculties following some more acute insanity, such as mania or melancholia. But the conception conveyed by dementia precox is that of a disorder, the essence of which is the loss of some mental faculty from the beginning of the insanity; that is, coincident with the appearance of mental symptoms such as those of mania or melancholia, skillful examination will reveal not alone confusion but actual loss of some part of the mind.

Mania or melancholia may be compared to the physical changes taking place in a badly swollen finger which has met with an accident, but which is capable of complete recovery. Dementia precox may be compared with the same finger in which a joint is injured so that it can only recover with loss of function, or better, to the same crushed finger with loss of a part. The swelling and temporary loss of function constitute the curable part —the insanity if you please—the rigid joint or the loss of the tip being comparable with the dementia. It is apparent, therefore, that the very name dementia signifies incurability. In any case of dementia precox it becomes necessary to measure the extent of the dementia or loss before prognosis is possible. If that be at all extensive recovery is impossible. But in mild cases great improvement is frequent. The best that can be said of the prognosis of dementia precox is that the condition of confusion may disappear and the mind may recover sufficiently so that the lost portion may be compensated, just as a man who has lost a finger may do his work nearly as well as before the loss.

Probably one-half of the total number of patients suffering from a first attack of dementia precox will improve under care to the extent that life without the asylum is possible. Each recurrence will materially lessen the prospects of recovery and ultimately 80 or 90 per cent. will terminate in chronicity.

GROUP IV.

Alcoholism and epilepsy are difficult to classify. Sometimes the mental symptoms they produce are due to toxic changes. More often they are caused by actual structural changes in the brain.

Alcoholism, according to the last report of the Oregon State Asylum, appears to have caused 134 out of 1,193 admissions, 8.9 plus per cent. of the total. Probably a large percentage of these patients passed through a number of short attacks of delirium before they were committed to the asylum. So far as recovery after their condition reaches a stage necessitating asylum care is concerned, it may be stated that many such patients recover after commitment the first time, but the rate of improvement diminishes with each recurrence.

Epileptic insanity is one of the most dangerous of the psychoses, not alone to the victim, but to those who surround or care for him. This for the reason that the epileptic insane are frequently homicidal. Of all forms of insanity we have, for that due to epilepsy, the nearest approach to a therapeutic specific. Many times the most furious outbursts of epileptic fury can be controlled by bromide or other sedatives. Attacks will recur if the convulsions cannot be controlled. Good hygiene is of great value in the prevention of both the convulsions and the maniacal attacks. Because of the uncertainty and unexpectedness of the attacks of mania which accompany epilepsy, patients suffering from epileptic insanity must usually be continuously confined in institutions. In other words, while individual attacks can be controlled, the underlying disease is commonly incurable.

GROUP V.

Finally we come to the two most typical insanities, mania and melancholia. The former of these throughout all time has represented the type of insanity best understood by the populace. The average conception of insanity is really that of mania. The shouting, excited, singing, delusional, happy or violently destructive person symbolizes insanity as it is understood by the mob. Happily it is one of the most recoverable of insanities. Not less than 70 per cent. of the cases of true mania recover from the first attack. A small number, perhaps 5 per cent. or less, die from exhaustion.

Many patients have recurrences but the period of normality is often so long that recurrence may be regarded as a new attack. Several years ago I closely observed fifteen cases of true acute mania in men in a private institution. Without exception all recovered, the average duration being six weeks. Many of these patients came from the higher altitudes east of the Cascade mountains and seemed to improve almost as soon as they came under care. In women, in an equal number of cases, the average duration was thirteen weeks, with two exceptions lasting a much longer period, one seven and the other thirteen months, when they were enabled to return home but had not fully recovered. There was one death in this group of cases.

Laymen regard mania as a type of insanity which is most frequent and best understood. My own conception of the most typical of the insanities is melancholia. In varying degree this disorder is certainly the most frequent, not perhaps in asylum life, but certainly in private practice. There are almost endless cases of this disorder which are seemingly so mild that they never reach the asylum. These patients present the best prospects of recovery of any of the insane. Peterson says that 90 per cent. of them recover. This rate may not be that of recovery in the asylum, but it is the approximate rate of recovery, if all forms of melancholia be considered. The rate would be still higher were it not for the frequency with which supposedly mild melancholiacs commit suicide. Herein early diagnosis plays a part of tremendous importance in the prevention of this appalling disaster.

The duration of melancholia is longer than that of mania, six months being a not unfair average in curable cases. Sometimes a year or more elapses before recovery takes place. If the cause can be demonstrated, i. e., business stress or worry, and removed, recovery can be materially hastened.

What factors are important in the recovery of insane persons? Early diagnosis is of paramount importance. The earlier the disease is recognized the better the prospect of recovery. Even preparesis may be a recoverable disorder. Paresis begins as syphilis of the nervous system and, if it can be treated in the preparetic stage, recovery is possible. It seems equally true that mania can sometimes be aborted if taken early, while recognition of a threatening melancholia permits treatment that may shorten the duration of the disorder or prevent suicide.

In established insanities asylum or sanitarium care begun early undoubtedly helps to a favorable prognosis. The important question to be decided is: Shall the patient be treated at home, in a sanitarium or in an asylum? The decision is comparatively easy in cases in which prognosis is hopeless, when medical aspects immediately cease to be of importance. The decision must then rest on esthetic or financial considerations.

But in the recoverable mental disorders the decision as to where to keep the patient is often difficult. Patients with mania or melancholia ought to be cared for as carefully as patients with typhoid fever. Because of the violence of mania, home care is impossible. In acute forms the private sanitarium provides a desirable method of care. But it is sometimes impossible even in sanitaria to do the things that are necessary and an occasional patient will be found who will do better in the asylum where he will be forced to observe the rules of discipline.

Without in any sense disparaging or criticising asylum care, it seems to me that the one class of patients who ought to be sent there only when all other means of care fail, are the victims of melancholia. These patients need individual nursing, forced feeding and an amount of attention which the state can scarce be expected to give. In addition, many of them feel keenly the idea of being confined in the asylum. This sometimes seems to confirm their delusions. But since the illness is necessarily prolonged and the expense of sanitarium care considerable, asylum care is frequently necessary. With those who still possess in large part their reasoning faculties, it sometimes becomes necessary to risk home care as the lesser of two evils, but it must never be forgotten that it is persons so cared for who furnish a large percentage of our suicides.

This paper cannot end without a plea to remove the stigma from insanity, to urge physicians to discourage the general views of insanity as something allied to criminality, to teach that the asylum is a hospital for sick minds and not a barred and guarded home for dangerous lunatics. In other words, to encourage and develop humane and sympathetic views of mental defectives and of those who give their lives in asylums to the care of these unfortunates.

THE PSYCHIC MIND IN MEDICINE.*

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In the progressive fields of scientific medicine nothing has shown with greater brilliancy during the past decade than the advance which has been made in the studies of biology and psychology as related to disease; the former more particularly as regards the genesis of disease and the sciences of immunology and prophylaxis which have developed to such a marked degree that the whole world is directing its attention to preventive medicine. The evolution was slow and gradual and still continues and, while yet pregnant with theories whose truth has ultimately to be proved, they have been of service as a hypothesis of disease without which further progress would have been impossible.

Of corresponding importance and of parallel growth has been the advance in the recognition of the forces of the mind in the development and treatment of disease. When one speaks of the psychic as pertaining to disease, however, the average physician affects an attitude of indifference. This is in part due to early training, in which, until quite recently, little stress has been placed upon this subject.

The physician is essentially a materialist. From the time of Virchow, who first placed pathology on a sound basis and thereby gave to scientific medicine a great impetus, the medical man has incessantly sought for the most minute organic lesion in disease. His whole attention was directed toward finding some visible or palpable change. It is scarcely to be regarded as remarkable, then, that he is not satisfied unless he can discover in a given process something tangible, something upon which he can rivet his forces and toward which he can direct his therapy. This unfortunately has been too much the case in the past and what is the result. The physician has not only assumed an indifferent mien but his knowledge of structural change has caused him to loathe anything but the physical; the invisible or non-organic presents to him an almost uncanny aspect. He decries even the suggestion of the value or potency of psychic influence, especially in treatment. He has, therefore, no interest in the subject, gives it neither time nor attention, with the inevitable result that he does not recognize it when seen, nor make proper use of it when indicated.

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The role played by the psychic mind in medicine is a dual one. In the first place, it may have to do with the production of disease or may constitute the whole disease; in the second, it may be an effective means of treatment. An attempt to show in what manner this force is mediated, both in the production and cure of the disease, is the purpose of this paper. I shall not hope to delve minutely into the psychologic principles involved or to depict fully the principles used in psychotherapy, but rather to show the evolution of disorders involving the psychic mind, from the primary perception to its dissipation, by means similar to those which gave it birth.

Evidence of the power of the psychic mind runs back into the most remote antiquity. At that time the therapeutic results were marvelous. Its force, however, was not recognized as such. This was at a time when it existed as a religious or faith cure and was used by the church for that purpose. It was at this time that it was immersed in obscurity and mysticism. The ancient temples of health connected with the church attest the great use of it in the early ages. Here all sorts of mystical contrivances were used in addition to the use of profound prayer. It was purely a faith cure. Collection of suitable cases in which diagnoses were made was not thought of. No scientific investigations were made and no progress was registered for centuries.

While old and commonplace in its use, the epoch-making period in its history dates from the time when its real nature was understood and its scientific application in disease was brought about. The first medical man to take real interest was Mesmer. He believed the results of his treatment to be directly due to animal magnetism which was passed from the operator to the patient and the many brilliant recoveries secured by him through the aid of his magnetic tub are famous in the history of psychotherapy. Braid, an English surgeon, followed Mesmer and it was he who coined the term hypnotism and made much use of the passive state in treatment of disease. It remained for Liebeault to be the first to recognise the value of suggestion in treatment and to establish the basis upon which modern psychotherapy rests.

Until fairly modern times only the psychic factor was recognized as a power in treatment. Its place and force in the causation of disease was little known and the manner in which this force was mediated was not even suspected. Psychology has elucidated these points which are now generally recognized.

The sensory perceptions are the units of psychic force. From them are developed all actions of the will and emotions. The force of the perceptions depends not only upon the strength of the stimulus but also upon the sensibility or susceptibility of the patient. All our concepts arise from sensory perceptions and impress themselves upon our consciousness. These sensory perceptions are retained as memory images which may be awakened at any time. By means of association, sensory perceptions and memory images unite to form ideas, the extent or complexity of the idea depending upon the number of sensory perceptions. A characteristic of the mind is activity and the possession of a belief or idea is an indication for action. Thus, every muscular movement or function is dependent upon a force higher up. This process of reaction of ideas upon the different functions gives us the basis of the force of suggestion and the results it produces. Thus, any incident may give rise to a psychic trauma, from which by association erroneous ideas develop, either to be discharged as harmless or to be retained as the original basis of a long chain of mental and body symptoms.

The sensibility of the patient, then, is really a strong factor in the reception and retention of these perceptions. The whole process of psychic infection and immunity is similar to that which obtains in an infection with a pathogenic bug, and the degrees of resistance are quite as variable. As the severity of the infection will depend upon the number and virulence of the organisms, the site of infection and resistance of the patient, so in psychic infection, while dealing with different forces, the pathogenesis is analogous. Here the pathogenic organism is represented by the false idea or concept which has arisen from perceptions or emotions, or are products of the imagination. These become more virulent the oftener the process is repeated or the imagination stimulated, and there is a corresponding decreased resistance in the central nervous system—the site of attack. This degree of resistance is variable. In those who are immune a strong will is possessed; in others the ability to resist is great but weakened by predisposing causes, such as grief, shock or any emotional disturbance. It is least in those who are of an imaginative temperament and those whose powers of judgment are little used.

Comparable to the action and development of the perceptions and ideas which give rise to disordered states is that of suggestion which is used to overcome them. Suggestion may be looked upon as a special kind of influence exerted by one individual upon another with or without the intent of the suggestor and without the previous knowledge or consent of the latter. It is an idea which has the power to replace, suppress or inhibit an opposite idea. A suggestion means belief in the reality of the idea, the acceptance of it, and the dismissal of the opposing idea. Its force depends upon the development of a conviction which is unopposed, that a certain definite thing will transpire, and this conviction means the acceptance of the idea as truth.

The force, methods of action and resistance which are offered to suggestion depend much upon the conditions under which they are mediated. The seat of action is the so-called subjective or subconscious mind. By reference to the subjective mind we understand the dualistic theory of the mind, according to Hudson, who divides the mind according to function into the objective and the subjective or subconscious mind. The objective mind, according to him, is the one through which we become aware of the objective world. It is supplied and controlled by the special senses. Reason and logic are its highest functions, as products of the physical brain. It is, so to speak, its own keeper and does not recognize the force of suggestion proceeding from another. The subjective or subconscious mind, on the other hand, is the one through which psychic processes are mediated. It is the seat of the emotions and memory. It acts by intuition and ignores the senses of the objective mind. It is the so-called soul and an abnormal activity of its function is manifested in the achievements of geniuses and prodigies. It acts best when it is unhampered by the control of the objective mind. Its great property from our standpoint is that of suggestibility. It accepts without doubt any statement, provided no contrary autosuggestion exists in the governing objective mind, whose influence is the same as the objective mind of another.

This suggestibility of the subconscious mind is used to advantage in the treatment of psychic disorders but resistance is so great at times that other expedients must be used to produce sufficient impressionability. Here the different forms of suggestion find their use. Suggestion may come from within, constituting autosuggestion, or from without, when advanced by another. It may be given when the patient is conscious, in the so-called waking state or when under the influence of hypnotism —the hypnotic suggestion. It is the suggestion given during the hypnotic state which deserves particular attention.

Hypnotism, until recently, was little used in medical practice. In France and Germany it holds an established place in therapeutics. Its limited use in this country is probably due to the widespread misconceptions of its nature. Hypnotism places the mind in a higher degree of suggestibility than is found in everyday life. This greater suggestibility is present because the will power and judgment are weakened by absence of the objective mind. In addition to suggestion another great faculty possessed by the subjective mind and increased in function during hypnosis is that of memory. This exaltation of memory power is a most conspicuous phenomenon. By this sharpening of the memory forgotten incidents are recalled, and ideas developed from them are brought to light and the mind is again put in equilibrium.

This property is of great importance and is the basis of successful therapy in many cases. Suggestions which have been given during hypnosis are not retained in memory during the waking state, yet at a later period, at the time specified in the suggestion, there comes an irresistible impulse to carry out the command. Thus, the suggestion given during the hypnotic state exerts its influence after recovery from this passivity. These suggestions are binding and only in exceptional cases do they fail. These failures are recorded in those cases in which something impossible or something which deeply offended the moral sense was suggested and are probably due to an opposing autosuggestion, whichever serves as an inward monitor.

An abnormal increase of suggestibility parallel to that of hypnotism exists for autosuggestion, coming from within, in many nervous diseases, especially hysteria, neurasthenia and psychasthenic conditions. It is a fundamental characteristic of these diseases. The autosuggestions form a stronger impression upon the mind than suggestions arising from without and this unusually strong tendency is evidence of disease. The will of the patient is not sufficient to break off the autosuggestion and psychotherapy by means of hypnosis stands in great use by offering strong counter-suggestions. Weaver states it well when he says: "It reaches inaccessible regions of dormant energy, breaks down inhibitions, liberates reserve energies and repairs breaches of mental activity. Painful systems become disassociated, disintegrated and again transformed, reformed and reintegrated into new systems full of energy, joy and life."

At this time it may not be amiss to consider briefly the change of mind in a psychophysiologic way, which is induced by these psychic forces. Authorities estimate that the cerebral cortex contains over nine billions of nerve cells, one-third of which are used for purposes of conduction and the remaining two-thirds serving as psychic centers. With such a vast number of highly specialized cells serving as an anatomic substratum, with each fully ordained for its particular work whether it be to receive, transmit or store an impulse, one should be amazed that they are usually able, against all conflicts, to preserve their permanent integrity of function, rather than become occasionally disoriented.

Whether or not psychic disturbance produces or is induced by organic change is questionable. Some authorities hold that in every case a distinct change in the brain cell has occurred. This change may or may not be visible. An intracellular, an intramolecular change or disorder of the smallest extent is sufficient to be the basis of a perverted, suspended, increased or delayed function. It is probable that every mental disturbance is due to a disorder of brain function and every change of function is due to a change in structure. That psychic states which are curable by psychic treatment are proof of the absence of organic change is not necessarily true. We know that perversion of function leads to alteration in composition and that these changes of a chemical nature may bring about structural changes in protoplasm which by their persistence give rise to fully developed diseased states.

Every disease has a psychic and many both a psychic and physical phase. Those who are inherently possessed of a faulty nature, who are easily impressed, who are introspective and conscious of a personal weakness of the will, are the ones in whom the psychic state predominates. Those in whom the physical status is more marked suffer alike from brain disturbance, which means lessened will power, and to assist the will is to bring about a restoration of healthy brain cells. Nearly every syndrome observed in physical disease has a counterpart in nervousness. The objective signs and symptoms are identical with those induced in body change. The fundamental thing, however, is not the signs and symptoms, the sensations and peculiar feelings, but the state of mind. This state of mind is the original and primal defect in the genesis of the fully matured disease. The traumatisms, such as illness and grief, while contributing causes, are overdrawn as factors in the development of the intense psychic state. They are received daily as incidents in the lives of all people but they reach a normal mind, are discharged and lead to no serious disturbance.

This peculiar mental state is seen in its ripeness in hysteria and to a less extent in neurasthenia. The hysterical patient with her imaginable symptoms suffers acute pain. It is not objective but the sensations are none the less keen and harassing.

How this state of mind may be corrected, false ideas and erroneous conceptions dissipated, belongs to the field of psychotherapy. This, as practised today, is a new science in medicine. It is a distinct specialization closely allied to psychiatry and neurology but so wide in its applications and so frequent in its indications, that it belongs quite as much to the daily practising physician. The increasing recognition of its power is manifested not only by the voluminous literature in the form of books, monographs and articles in magazines but also by its adoption by others outside of the profession. For the latter condition the physician himself is largely to blame. The failure of physicians to give attention and study to psychic treatment is the principal cause of its practice by impostors and those who are overly enthused.

"If disease may be looked upon as a manifestation of life under abnormal conditions," then psychic disease is that condition in which erroneous ideas or concepts exist either primarily in the mind, or as functional disorders superinduced by some organic defect. In pure psychic disease all affections are produced by force of idea or imagination and the basis of psychotherapy consists in removing them by the same means by which they were induced.

Psychotherapy is essentially a treatment of symptoms. Suggested thoughts on a receptive mind will produce sensations and actions which were absent before and will replace those that are existing. Suggestion is the drug ready to the hand of the physician who would use psychic treatment.

The method by which these changes of function are brought about does not differ essentially from the process resulting from physical stimuli. The centers which automatically regulate the calibre of the vessels, preside over glandular secretion, etc., are at work and the difference lies in that the response is to a different stimulus. The anatomic nervous paths are complete and the higher centers receive and then discharge their impulses to the lower ones whose duty it is to control these various acts. In the use of suggestion, religion and moral influence produce profound effects, not as inspirations but as medicines. Religion does not make the cure but its influence through faith inhibits disturbing influences and powerful stimulation is given to latent energies. There is in some cases the ever-present danger of developing a religious fanaticism but, used as a medicine, the dose should be regulated accordingly.

In addition to pure suggestion other psychotherapeutic methods are in use. Most prominent among these are the so-called catharsis method and the psychoanalytic method of Freud. The principle and effectiveness of the catharsis method depends upon relieving the mind of all distressing and harassing ideas—a so-called mental purgation. Any idea retained for any period of time recalls the perception or incident, real or imaginative, which gave rise to it. This leads to an emotional state which, unless relieved, causes marked internal strife. This method was the forerunner of that which was developed by Freud of Vienna. His method, as now used, is similar to the former in that both consist primarily in the ablution of the mind. The causes operating to produce disordered states was not investigated in the former. Freud, however, has enlarged upon this, investigated the casual conditions more minutely and thereby developed a system uniquely his own.

He has found that in many persons the disordered functions are due to an emotional distress which had its genesis during childhood. Throughout years this has lain in the subconscious mind, the incident itself forgotten, but the morbid conditions continuing to exist. By patience and perseverance, with the subject in a passive mood, he attempts to call upon the subconscious mind to recall these causative incidents. Free confession follows, then comfort and eventual cure as a result of the relief. That this is true and is rational is explained by the facts which govern the psychopathology of these cases. The thought which is produced during these passive or hypnotic states is one which brings back to consciousness, not new or disconnected thoughts, but memory images of the past. They remain latent either because they are suppressed through fear, timidity or shame or because no associated thought has stimulated them to action. Under proper conditions associations are formed which call these images into consciousness. If destruction of the neurones which hold these images or severance of the fibers leading to them has occurred, no result is obtained.

Dubois believes in and practises psychic reeducation, based upon the foregoing principle. He analyzes minutely the symptoms of the patient, explains them to him in great detail, the force of his psychic state in the matter and encourages him in his ability to throw them off.

Freud's theory of the genesis of these hysterical and psychasthenic states has not been uniformly accepted. Referring all ideas to incidents of early childhood, more especially to the sexual instinct, or his so-called "instinct for reproduction," has not gained general favor. He decries the use of suggestion because it has nothing to do with the origin or force of the morbid symptoms but suppresses cause by adding an additional suggestion.

It is to be seen, therefore, that of each case is required an individual study. Upon the results of this study is the particular method or combination of methods to be based. One should have a broad view both of the disease and of its treatment. The tendency of physicians is to treat disease in general as an isolated process, quite unmindful of the numerous conditions of the past and the hopes of the future which are so potent in all cases. It has been truly said that the patient often needs a stronger hold upon life, while the routine prescriptions may too easily reduce that hold by fixing the attention on the symptoms.

Of the great usefulness and dire neglect of psychotherapy there is no doubt. Were it to do no more than offer "balms for men's souls" its use would be justified. That it does correct disordered function and restore health is true, "if the only real test of health be the serviceableness to the needs of life."

UROBILIN IN THE URINE.*

By Gustav Baar, M. D.,
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The bile pigments, bilirubin and biliverdin, which enter the intestinal tract, are for the most part excreted with the feces. Only a smaller amount enters by absorption into the general circulation and thence returns to the bile. The bulk of bilirubin, after entering the intestinal tract, is there reduced by intestinal putrefaction to hydrobilirubin (stercobilin) and appears as such in the feces and also, but in very small and variable quantities, in the urine. This identical substance, when appearing in the urine, is called urobilin.

If the reducing process in the intestinal canal becomes very active, this hydrobilirubin (urobilin) may become reduced to the colorless leuko-hydrobilirubin (urobilinogen). When appearing in the urine, urobilinogen, on standing exposed to the air or by being oxydized, may be changed into hydrobilirubin (identical with urobilin). The relation between the urobilin excreted in the urine and that excreted in the feces, according to Gerhardt, is never constant.

Unchanged bile pigment (bilirubin) appears in the feces only when there is no intestinal putrefaction present, such as in the meconium of the newborn or the feces of the nursling, or in cases of increased peristalsis with consecutive insufficiency of reduction. The appearance of unchanged bilirubin instead of, or beside urobilin, must be considered pathologic, except in the above mentioned conditions. Biliverdin appears in the feces of adults only after the use of calomel.

Urobilinuria. By this I always understand pathologically increased excretion of urobilin through the urine. The normal average of urobilin in the urine, plus that in the feces, in healthy persons who are kept on pure milk diet or pure proteid diet, reaches, according to Müller, 83 to 89 mg. pro 24 hrs.

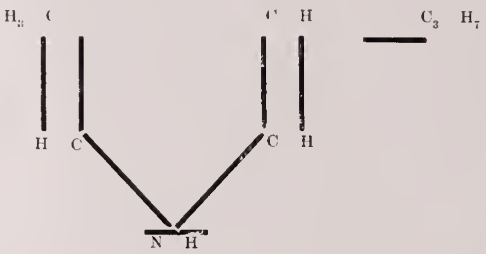
Hildebrandt thinks that in the normal state there is no urobilin present in the urine and that there is its chromogen (urobilinogen) only in traces. Under pathologic conditions, however, we find in the urine not only urobilinogen but also urobilin.

Let us consider first these two bodies separately.

Urobilinogen. In 1901 Ehrlich discovered that normal urine, when treated with a muriatic solution of dimethylamidobenzaldehyd, gives a slight pinkish discoloration. In some pathologic urines this discoloration takes place in a much more intense manner. Ehrlich thought that the cause of this reaction was some unknown urinary constituent. Ehrlich's disciple, Pröscher, studied the body in question and came to the conclusion that it was some sort of derivative of glycosamin.

Pappenheim was impressed with the fact that this reaction occurs very intensely in dark urines, rich with urobilin, and founded thereupon his claim that the urobilin or one of the various urobilins must be the cause of the reaction. However, Otto Neubauer found an intense reaction in many light urines and vice versa, and succeeded in proving that it was the urobilinogen, already known, which caused the reaction and that this, on being exposed to light and air, changes into urobilin. After one reduces the urobilin by means of natrium-amalgam or zinc and HCl. until the solution turns colorless, one can get a gorgeous pinkish discoloration of the solution by adding to it the above mentioned aldehyde. Spectroscopically there are characteristic absorption lines on the transition of the yellow to the green.

Neubauer not only succeeded in obtaining urobilin thus out of urobilinogen by reducing it, but also in obtaining urobilin by reducing the higher derivatives of hemoglobin-bilirubin, hematoporphyrin and hematin; also by reducing chlorophyll. One can, therefore, apply Ehrlich's aldehyde reaction as a general reaction to the group of the blood and leaf pigments. Nencki and his colaborators obtained, by reducing blood and leaf pigments by means of iodinehydrogen and iodphosphonium, an oxygen-free body, or hemopyrrol ($C_8 H_{13} N$) which gave the pyrrol reaction.



Standing exposed to the air this pyrrol easily changes into urobilin. One, therefore, must consider this body, which is the basis of all the blood and leaf pigments, urobilin. On the transformation of the hemopyrrol ($C_8 H_{13} N$) into urobilin ($C_{32} H_{40} N_4 O_7$) there must originate a row of intermediary bodies with increasing oxygen contents, all of which possess the quality of transforming into urobilin. For this reason they all must be considered urobilinogens. Which one of these urobilinogens obtains in the urine is not known. There must be various grades, for one can easily observe that some urines will give the reaction when cold; others, however, when heated or when freshly voided.

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*Read before the Portland City and County Medical Society, Portland, Ore., March 4, 1914.

We are using the following reaction for urobilinogen (Clemens and Hildebrandt): Four gm. paradimethylaminobenzaldehyd are ground up in 20 gm. concentrated fuming HCl. Concentrated HCl. is then added up to 100 cc. and 100 cc. of aqua dest. One adds to 10 cc. of urine 1 cc. of the above mentioned solution and shakes well. In some cases a light pink color forms, in others a very intense red or even a redish violet color. Spectroscopically this red liquid shows more or less intense absorption bands on the transition of the yellow to the green. This red discoloration and these absorption bands are characteristic for urobilinogen, as mentioned before.

As the urobilin, on being mixed with the muriatic reagents, changes very quickly, we recommend for the qualitative test to simply add a few drops of the reagent and thoroughly shake the mixture. It assumes a faintly pinkish or a violet discoloration, according to whether there are larger or smaller quantities of urobilinogen present. If the urine be not fresh, one can see spectroscopically, beside the one band characteristic for urobilinogen, another band on the transition of the green to the blue, next to the F line; this second absorption line is characteristic for urobilin.

Munzer and Bloch recommend for urines which contain only very little urobilinogen the following procedure. Shake 10 cc. of urine with the aldehyde reagent; add 1 to 2 cc. of amylalcohol and shake thoroughly again. The whole emulsion assumes a faintly pinkish tone. The amylalcohol collects in the course of a few hours above the urine. The latter turns a perfectly clear amber and shows, spectroscopically, neither the absorption band for urobilinogen nor for urobilin. One adds, thereupon, a few drops of pure alcohol to the natant amylalcohol emulsion to clarify it, and obtains a beautiful red discoloration which represents the whole quantity of unrobilinogen and urobilin, contained in the 10 cc. urine used.

One must remember, however, that not every amylalcohol is adapted for this purpose, because many fusel oils, if mixed with the aldehyde, exhibit a similar reaction. One, therefore, should always first examine the amylalcohol for the presence of fusel oils; to-wit, the amylalcohol itself should not cause any pinkish discoloration, if mixed with a few drops of aldehyde reagent. The amylalcohol should be first purified by means of filtering it through animal charcoal.

Returning to the meaning of the aldehyde reaction, we must first emphasize again that this reaction is caused by the blood-pigment derivates contained in the urine. The clinical observation agrees fully with this statement. One finds the aldehyde reaction positive, especially in diseases which show a destruction of hemoglobin, as malaria, plumbism, pneumonia, pulmonary infarct, venous thrombosis and various infectious diseases. One finds this reaction positive in infections of that organ which excretes first the cleavage products of the hemoglobin, the liver. Only in cases of complete obstruction of the common bile duct or hepatic duct is this reaction absent. This concurs with the observation of Müller who noticed a disappearance of the urobilin in the urine of cases suffering from complete obstruction of the common bile duct. These observations certainly speak strongly for the enterogenous origin of these hemoglobin derivates, as we shall show later.

Kimura examined numerous specimens of bile taken from cadavers, with the aldehyde reaction, and found urobilinogen to be a constant constituent of the human bile. He found it increased in the bile in the same diseases in which it is increased in the urine; but he failed to find it in cases of common duct occlusion and severe diarrheas. Inasmuch as the bile contains urobilinogen, one should certainly expect to find it also in the feces, as it actually was found by Kimura. I shall return to this point when speaking of the clinical importance of urobilinogen and urobilin in the urine, but will say in advance that Schlesinger, as well as others, found the urobilin by means of his test in serous liquids (liver cirrhosis, tuberculous peritonitis). He could prove the presence of urobilin in as weak a solution as 0.002 per cent. in normal blood serum as well as in an aqueous solution. He could not prove its presence, however, in the serum of three cases of nephritis which showed a very strong urobilin reaction in the urine. He at last found that the presence of the red blood corpuscles interfered with the reaction and modified his test for this reason. In spite of this, however, he failed to get a positive reaction for urobilin in the blood of fifteen patients with various diseases, in whom the urobilin test in the urine was strongly positive, and therefore concluded, like Gerhardt and Fr. Muller, that urobilin is not present in the fresh blood in any large quantities and that perhaps the blood corpuscles, on account of the addition of the zinc acetate, cause precipitation of the urobilin.

Biffi proved that the urobilin appears in the blood as a chromogen-urobilinogen. Hildebrandt proved the same to be the case for the serum. In other words, the urobilinogen is only the transportation form of the urobilin within the body and certainly it is more adapted for that purpose on account of its greater diffusibility than the urobilin itself.

Urobilin. Jaffé, discoverer of urobilin, added to the urine a few drops of alcoholic zinc chloride solution and so much ammonia as to dissolve the gelatinous precipitate of zinc hydrate. He then filtered the solution from the phosphatic precipitate which may have formed. Neubauer and Vogel modified this test. The best test, however, is that originated by Dr. Wilhelm Schlesinger, because it gives immediately a beautiful fluorescence and very distinct bands in the spectrum, even in urines that contain only little urobilin and relatively many other pigments, and because it is also very simple. One takes in a test tube equal quantities of urine and of an absolute alcohol solution of zinc acetate 10 per cent. and filters. The filtrate gives, when the light cone of a pocket electric light strikes it, a beautiful fluorescence even in a dilution of urobilin 2 to 1,000,000, or 0.0002 per cent. The filtrate usually is much more clear and light in color than the urine was before the zinc acetate was added.

If bilirubin be present in the urine at the same time, the presence of urobilin can not be proved so easily, on account of the much more intense absorption band which the former shows spectroscopically. If there be only a moderate amount of bilirubin, one easily obtains a fluorescence with the Schlesinger test, because the bilirubin is precipitated by zinc acetate. If, however, there be excessive bilirubin present, one should, according to Bouma, mix first 8 cc. of urine with 2 cc. of a 10 per cent. calcium chloride solution and add ammonia until the mixture is exactly neutral, and then filter; with the filtrate, one should make the Schlesinger test. This is very important in cases of diseases associated with icterus, because the entire absence of urobilin in the urine in cases of icterus positively proves a complete occlusion of the common duct.

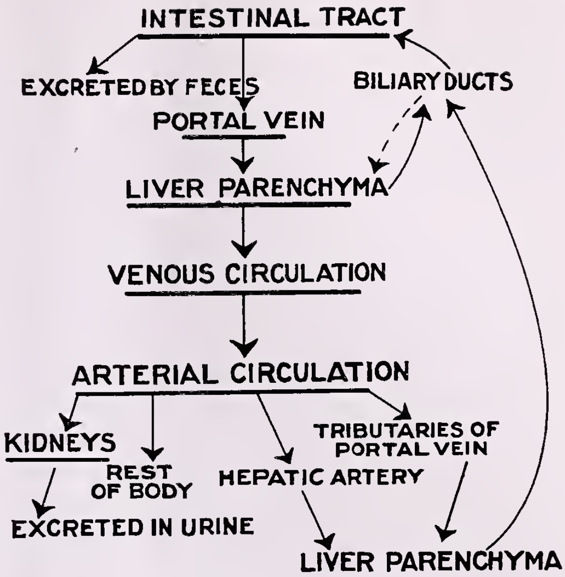
According to Hildebrandt, who does not see any value in the simple qualitative test for urobilin in the urine, one proceeds in the following manner: First, a test-tube is filled two-thirds to three-fourths full with equal parts of urine and Schlesinger reagent, shaken and allowed to stand from twelve to twenty-four hours; if the urine shows a very heavy sediment it ought to be first well shaken before making the test, because the sediment, as a rule, precipitates the largest part of the urobilin present, while the urine above the sediment contains only a small percentage of the entire urobilin. Second, the filtrate, which has sedimented twenty-four hours, is examined for fluorescence. Dr. Coffen and myself have constructed a little dark chamber, into which the test-tube with the filtrate is held, while the light cone of an electric bulb through a slit in the wall falls upon the test-tube with the filtrate and shows beautifully the presence or absence of fluorescence. The spectroscopic examination gives better results, if one removes first the fluorescence by adding drop by drop HCl. to the filtrate. Third, if there appears no fluorescence in a clear filtrate, there is surely no urobilin present. If, however, the filtrate turns yellowish-red or pinkish, there is nearly always a pathologic amount of urobilin present and the fluorescence in such a case is only suppressed by too strong an acid reaction of the mixture. It will appear presently by adding to the filtrate some ammonia and eventually filter again. Intense fluorescence appears only in cases of urobilinuria or, in other words, in cases where the urobilin in the urine is pathologically increased.

Quantitatively Hildebrandt tests urobilin by means of the spectroscope, using a narrow slit and having the Fraunhofer lines visualized very sharply, using test-tubes of one and one-half cm. diameter and, if possible, always the same test tube with daylight. First, if there be no absorption bands or not distinct ones present, he calls the reaction + Second, if the absorption bands are 2 mm. wide, the reaction is + + . Third, if the absorption bands are more than 2 mm. wide, the test is + + +.

In resumé, I wish to say, in accordance with Münzer and Bloch, that urobilin is excreted in the urine not as such but as urobilinogen. Out of the urobilinogen, on standing exposed to the daylight, urobilin gradually forms. Therefore, in urine freshly voided, we must first examine it for urobilinogen, with the Ehrlich aldehyde solution which will give us immediate information. If, however, the urine has stood for some time after voiding, we should convert the urobilinogen into urobilin by adding a few drops of iodine tincture to the Schlesinger test reaction. In freshly voided urine of normal people there are only traces of urobilinogen present. It is of no particular importance whether there be present urobilin or urobilinogen, because we are testing for both when we apply the above mentioned test for urobilin.

I term urobilin the sum of all those bodies which, after standing exposed for twenty-four hours to light and air and being treated with zinc acetate solution, give spectroscopically the typical absorption between the Fraunhofer line E and F and show characteristic green fluorescence. These physical qualities are exhibited by the finished urobilin as well as by its chromogens, of which there are several, as we mentioned before, differentiated only by the smaller or larger amount of oxygen they contain. Using our method the urobilinogen, by taking up oxygen, turns into urobilin. It is doubtful whether under normal conditions urobilin is present in the body at all, except in the intestinal contents. The chromogens of the urobilin, called urobilinogen, play a much vaster importance in our body.

Clinical Importance. For the better understanding of the clinical importance and the interpretation of the urobilin test, I request you to glance at a chart which graphically depicts the circulation of the urobilin (Hildebrandt). The enterogenous urobilin is carried to the liver through the portal vein and is reabsorbed here by healthy liver cells and excreted into the biliary ducts; only a small fraction escapes this reabsorption and enters the general circulation. From this latter one part is excreted through the kidneys, another part reaches the tributaries of the portal vein and with the latter returns to the liver, where it commences its circuit again; still another part reaches the liver cells through the hepatic artery, is absorbed by the liver cells and excreted into the biliary ducts and thus enters the intestinal tract, from which it is taken up again by the portal vein.



Circulation of Urobilin.

Thus we can explain why we find urobilin even in the jejunum or even in the vomitus. There exists thus a circulation of urobilin between the intestinal tract and liver by means of the portal vein, and between the liver and the intestinal tract by means of the biliary ducts. Disturbances in the various stations will cause disturbances in the normal status of urobilin.

First, intestinal tract. As we have mentioned before, the bulk of urobilin originates in the intestinal tract, because all of the bilirubin and biliverdin are reduced within the same, by means of reducing bacteria, to urobilin. If there be a lack of reducing bacteria, there will be a lack of urobilin; this is the case with the newborn. If the passage of the intestinal contents be greatly accelerated (profuse diarrhea), no reducing process can take place. We then do not find urobilin but we do find bilirubin in the feces. If there be no bilirubin in the feces, there will be no urobilin in the urine. This is the case with complete occlusion of the common bile duct or in cases of complete biliary fistula, in which all bile is being drained outward, or in cases of complete occlusion of the papilla Vateri, caused by duodenal catarrh. In these latter cases, however, we have found traces of urobilin in the urine on account of the icterus, which allowed some quantity of bilirubin to enter the intestinal lumen simultaneously with the intestinal secretions and to be reduced there to urobilin.

We should not find any urobilin in diseases in which there is present a decrease of bilirubin with consecutive decrease of enterogenous urobilin. This is the case in amyloid degeneration of the liver or acute yellow liver atrophy. For the diagnosis of these conditions it is much more important to find a decrease of urobilin in the feces than in the urine. We shall not find urobilinuria in cases of profuse vomiting of bile for the same reason.

The seemingly acholic feces without concomitant icterus do in fact contain the colorless urobilinogen, not the finished urobilin; in these cases we naturally do find urobilin in the urine. We, therefore, should not term feces acholic without previously examining them for urobilinogen.

Second, the portal vein. If there be a narrowing or obstruction of the portal vein with consecutive formation of the collateral circulation, "Caput Medusæ," the urobilin coming from the intestinal tract and escaping reabsorption by the liver cells enters the general circulation and is excreted in the urine.

Third, biliary ducts. The process in cases of complete occlusion of the common duct or complete biliary fistula I have already mentioned. I wish to add here that, in the beginning of these pathologic conditions, we may still find urobilin in the urine but we shall find it only as long as there is bilirubin within the intestinal tract present, which has been secreted into the same while the common duct still was open. As soon, however, as this amount has been absorbed by the intestinal wall and no fresh supply of bilirubin enters the intestinal tract, we shall find no urobilin in the urine. In cases of infected biliary ducts, urobilin may form within the same through the agency of the bacteria present. By entering the general circulation urobilin will appear in the urine: Such urobilinuria should be called "cholangiogenous urobilinuria."

Fourth, rest of body. Transudates and exudates, caused by stasis or inflammation, may load themselves full of urobilin and thus create a urobilin depot, which may be the cause of a temporary urobilinuria, even after complete occlusion of the common duct has taken place. In cases of grave parenchymatous diseases of the kidneys, the urobilin excretion is interfered with, not so in cases of congested kidneys. Obstipation *per se* never causes even the slightest urobilinuria, nor does fever per se cause it.

Fifth, liver. It is the task of the liver cells, as we know, to reabsorb the urobilin carried to them through the portal vein and excrete the same with the bile. If the liver cells are injured in this, their function, whether by infectious or toxic influence (like acute infections, angina lacunaris, etc.), the urobilin must needs enter the general circulation and thus be excreted in the urine. We shall, therefore, find urobilinuria in every case of parenchymatous hepatitis to an extent corresponding to the extent of the disease. If the parenchymatous hepatitis be very extensive, as is the case in acute yellow liver atrophy, the urobilinuria will not increase with the increase of the pathologic process but decrease, because, as we have said before, the liver cells do not produce enough bile and a lack of bile entering the intestinal tract means decrease of urobilin in the urine.

The same happens in cases of cachexia. Every time that we find the urobilin contents of the feces not increased and simultaneously do find urobilinuria, we may positively diagnose absolute hepatic insufficiency. This latter may be a temporary or a constant one, according to the kind of liver disease we are dealing with, but a liver disease does always exist under these circumstances. In cases of acute catarrhal icterus we find urobilinuria before any icterus develops. (Certainly another proof that these cases are caused primarily by parenchymatous hepatitis.) This view is supported also by the findings of Bauer of a strong alimentary galactosuria in catarrhal jaundice, findings which were verified by Reiss and Jehn.

If biliary stasis take place within the liver, the intercellulary processes of the overdistended biliary capillaries tear open, as Eppinger has proven, and the bile evacuates into the lymphatic channels which surround the distended biliary capillaries. This means icterus. But even if the processes do not break, but merely bulge into the lymphatic channels by pushing aside the liver cells (Abramow), the bile can easily diffuse through the thin membranes of the capillary channels and we shall again find icterus. Under such conditions the liver cells have allotted to them the task to absorb the bilirubin which is carried to them through the hepatic artery, and to excrete it into the biliary channels; they are already overdistended, though, hence the liver cells must of necessity saturate themselves with bilirubin and lose the faculty to absorb any urobilin which the portal vein is carrying to them. The urobilin, therefore, will not be reabsorbed by these liver cells and must enter the general circulation, whereupon it appears in the urine. Urobilinuria in these cases, therefore, always means biliary stasis.

As a consequence of repeated liver congestions, caused by cardiac decompensations or by grave infectious diseases, certain areas of the liver cells are destroyed and substituted by connective tissue. We shall find that the urobilin which is carried with the portal vein to these areas can not be reabsorbed, owing to the lack of liver parenchyma in these districts. It passes, so to speak, by these districts into the general circulation. This means urobilinuria again, that urobilinuria which appears after certain pathologic conditions of the liver have subsided.

General circulatory disturbances *per se* do not lead to urobilinuria; this latter takes place only after the function of the liver cells has been disturbed. With this agrees fully the fact that we do not find alimentary galactosuria in a simple congested liver, but we do find it, as we do urobilinuria, in liver cirrhosis.

If there be present an increased destruction of red blood cells, the bile secreted into the intestinal tract will contain much more bilirubin (pleiochromia) and for this reason there will follow an increased formation of urobilin within the intestinal tract. Ponfick found that the liver is capable of eliminating up to 1-60 of the normal hemoglobin amount by increased formation of bilirubin. If, however, this upper limit be transgressed, a relative insufficiency of the liver cells takes place, because these latter are so much taken up with transforming the hemoglobin into bilirubin that they simply let the urobilin pass, carried to them by the portal vein, into the general circulation, whereupon this urobilin appears in the urine. These are the cases of urobilinuria in spite of a healthy liver, appearing in large hematomata during the absorption of the latter, or in some hemolytic processes or, as I have observed, in ruptured extra-uterine pregnancy. If the destruction of red blood corpuscles assumes a still larger extent, there may set in icterus as a consequence of the stasis of a very condensed bile. We shall find clinically, as an expression of increased blood destruction, icterus, urobilinuria, bilirubinuria and hemoglobinuria. These symptoms mean an extensive destruction of red blood cells. The liver has become insufficient, not only as regards to the reabsorption of increased urobilin, but also as regards the transformation of the blood derivates into bilirubin.

One can explain the urobilinuria in these cases of pleiochromia also by assuming that abnormally large amounts of urobilin are found in the large intestine and excreted, after leaving the liver, into the duodenum with the bile; thus we shall find urobilin also in the duodenum. Now one could understand why such large amounts of urobilin would simply pass by the liver cells and cause urobilinuria.

Münzer and Bloch mention grave cases of anemia which, in spite of extraordinary large amounts of urobilinogen and urobilin in the feces, showed no urobilin in the urine, just because the liver did functionate normally. There was no relative hepatic insufficiency present in these cases. They made the same observation in cases of polycythemia, hemorrhagic diathesis and hemophilia. The physician who begins to think of a liver disease only after hemorrhages of the intestinal tract or icterus, or swelling of the liver and spleen, or ascites have taken place, must necessarily overlook a great number of liver affections.

Diagnostic Importance of Urobilinuria. (1) If the feces contain normal urobilin quantities, the urine, however, abnormally large urobilin quantities, there must be present absolute hepatic insufficiency (all parenchymatous liver diseases as well as obstruction of the portal vein are examples of this type).

(2) If the feces contain abnormally large quantities of urobilin and the urine also (enterogenous urobilinuria), there may be present (a) increased intestinal putrefaction with a consecutively increased formation of urobilin; (b) pleiochromia on account of hemorrhagic transedates or increased destruction of red blood corpuscles (toxic or infectious), in other words, relative hepatic insufficiency.

(3) If we find in the feces subnormal quantities of urobilin; in the urine, however, hypernormal urobilin quantities, we have to deal with the so-called cholangiogenous urobilinuria, produced by disturbances in the biliary duct system.

DIRECT TRANSFUSION OF BLOOD WITH SPECIAL REFERENCE TO ITS USE IN PERNICIOUS ANEMIA.*

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For the sake of convenience I have divided this paper into four subheads: (1) History. (2) Indications. (3) Technic. (4) Conclusion.

I have taken the liberty of quoting rather freely from the works of Crile and Carrel, inoculating here and there some of the facts I have gathered in an experience with some twenty-one arteriovenous, direct transfusion operations.

HISTORY.

It is impossible to say when and where the idea first originated of transferring blood from an animal or a person to the veins of a person suffering from the loss of blood or afflicted with disease. That the ancient Egyptians knew about it and practised it is probable from allusions made in their history. In the Book of Wisdom, of Tanaquilla, the wife of Tarquin, mention is made of the custom, and Herophilus clearly refers to it in his treatise on anatomy. In the sacred book of the priests of Apollo it is referred to, and in the Metamorphoses, of Ovid. It is also mentioned in the works of Pliny and Celsus, where it is condemned.

What is probably the earliest authentic case on record is that of Pope Innocent VIII, who was operated on in April, 1492. The vital powers of Innocent VIII rapidly gave way; he had for some time fallen into a kind of somnolency which was at times so profound that the whole court believed him to be dead. All means to awaken the exhausted vitality had been resorted to in vain, when a Jewish doctor proposed to do so by the transfusion of the blood of a young person, an experiment which had hitherto only been made in animals. Accordingly, the blood of the decrepit old pontiff was passed into the veins of a youth, whose blood was transfused into those of the old man. The experiment was tried three times and at the cost of the lives of three boys, probably from air getting into their veins, but without any effect to save that of the Pope. This case, beside being the first authentic one, is the first in which death was ascribed to air embolism.

Francesco Folli gave a reading before Frederick II, of Tuscany, in which his intention of performing transfusion was stated, and in 1652 he wrote the following: "I have read William Harvey's book which treats of the movement of the heart and blood. This reading, with some ideas I had on the grafting of plants, gave rise in my mind to this third problem, that, the circulation of blood existing, it would be possible to perform transfusion, by means of which one could not only cure but rejuvenate and make robust." Folli used two cannulas in performing transfusion, one of bone and the other of silver. They were connected by a piece of intestine or by a piece of prepared artery, and there was a side branch for the escape of air.

In January, 1667, there appeared in the Philosopher's Journal an article by Richard Lcwer, in which he gave the first detailed account of the method of performing transfusion. According to this method the carotid artery of one dog was freed and, by means of quills, connected to the lower end of the jugular vein of another dog. When the blood was allowed to pass over, the upper end of the jugular vein of the recipient was unligated so that, as it received the new blood, it lost an equal amount of its own blood, a balance being thus maintained between inflow and outflow. By this method the donor of the blood was allowed to die.

In the same year Denys, of Montpellier, wrote experiments which he performed on animals. He describes two transfusions which he made on patients. His idea was that "In practising transfusion one can only imitate the example of nature, which, in order to nourish the fetus in uterus of the mother, makes a continuous transfusion of the blood of the mother into the body of the infant through the umbilical vein."

His first patient was a young man sixteen years old who was in a stupor, following a fever which had lasted two months and in the course of which he had been bled twenty times. Denys withdrew three ounces and transfused nine ounces of arterial blood from a lamb. The result was a complete cure.

In the second case, purely experimental, the subject, well and strong, received a consideration for permitting it. About ten ounces of blood were removed from a vein and an equal amount transferred from a lamb. The patient experienced an agreeable sense of warmth but had no unpleasant sensation and no ill effects occurred.

In a third case, during a maniacal attack in an insane man, thirty-four years of age, six ounces of blood from a calf were transfused and, when calm, a still larger quantity. These operations took place toward the end of 1667, and the patient did not have a return of his symptoms until January, 1668.

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In 1683, at Frankfort, on the Oder, the surgeons Kaufman and Purman are said to have cured a leper by transfusing into his veins blood from a lamb.

In 1792, in Cambridge, Harwood reanimated an exsanguinated dog before an audience by means of transfusion.

The beginning of the new era was signalized by the work of Blundell, in England. After witnessing the death of a woman from internal hemorrhage, he came to the conclusion that her life might have been saved by transfusion. He used tubes, collecting blood from the femoral artery into a vessel, and then injecting into the femoral vein. In particular he noted that a less amount of blood was necessary to reanimate a bled dog than the amount of blood lost by the dog.

Direct Transfusion. The greater part of transfusion, as formerly performed, was done crudely and, as good hospitals were unknown, many accidents arose from infections, passage of blood-clots into recipients and air embolism. Moreover, Crile states there was an unfortunate selection of cases. It was natural, therefore, that the advent of saline infusion as a substitute for transfusion should have been hailed with enthusiasm and that the latter should have been almost entirely superseded by it.

Almost as far back as we have historical records the idea of the replacement of lost blood with other blood has appealed to the imagination of mankind. The essential need of a safe method which would meet all the requirements not being fulfilled, it was necessary to wait until an opportunity, such as that afforded by the work of Alexis Carrel appeared, in 1902, since which time a new field of surgery, that of the vascular system, has been opened and with it the wonderful possibility of the transplantation of organs is technically at hand.

INDICATIONS.

Direct transfusion is undertaken to increase the quantity or improve the quality of the blood of the recipient. When properly safeguarded it may be safely done.

(1) *Positive.* In profound hemorrhage we have the indication par excellence. Isotonic blood transfused forms an ideal, a perfect substitute for the lost blood and, as Crile states, the factor of hemorrhage is thereby eliminated. It is possible to render cases, apparently inoperable on account of shock, suitable for operation. Instances of this kind are met with in gastric or duodenal hemorrhage, in hemorrhage following typhoid and extra-uterine pregnancy. In these cases it seems to be almost a specific in the prevention and treatment of shock.

In hemophilia it is of positive value in checking further oozing. In hemorrhage of the newborn, according to Vincent, who reports eleven cases and eight cures, several of which were treated with animal serum without result and were subsequently cured by transfusion. Not only does it restore all the elements needed for coagulation, but it serves to correct the anemia by replacing the cellular elements which have been lost in hemorrhage.

I have recently treated a case of hemorrhage in the newborn, in which transfusion was done on an infant two days old who was pale and pulseless and whose tissues when cut did not bleed. I succeeded by means of a Luer syringe and No. 21 gauge needle in injecting 10 cc. of the father's blood into the exposed median basilic vein of the baby, bringing back color but without success. However, I attribute this failure to the fact that the recipient was completely exsanguinated, having bled profusely and continuously from the bowels for four hours before opportunity for transfusion even presented.

In illuminating gas poisoning, bleeding followed by direct transfusion offers the ideal form of treatment.

(2) *Relative.* Transfusion of blood from an immune animal has cured sarcoma in dogs. In human sarcoma there is evidence of value, although it is not yet proved. In toxemia, certain drug poisonings, acute hyperthyroidism, carcinoma and uremia it has been of no value. In cases of tuberculous peritonitis the operative risk is greatly improved by transfusion. In cases of chronic suppuration transfusion may cause a marked increase in the vitality of the patient.

In pellagra, with which I have had some experience (at Cook County Hospital for the Sick Insane, in conjunction with Dr. L. J. Pollock), it proved of a real value in a few cases only. Cole and Winthrope report excellent results in eleven cases. We will pass over the foregoing as this contribution has to deal chiefly with the use of direct transfusion in pernicious anemia.

History of Transfusion in Pernicious Anemia. Years ago Gusserow made the attempt to combat the severe symptoms in certain cases by the transfusion of blood, but without success. Later a whole series of clinicians tried the same but in vain till Quincke, in 1873, succeeded in obtaining marked improvement in one case. This is the one several times quoted in which Quincke found that the number of red blood cells sank to 143,000 per cc. The intraarterial transfusion of 85 cc. of defibrinated blood was followed in twenty-four hours by an evident change in the general condition and a complete restoration of the patient within several months.

From the numerous communications on this subject, in which reports of success and failure alternate with one another, the writer will mention only that of Ewald because in none of the other patients was the danger so threatening. Ewald, without any hope of success, but only desirous of leaving no stone unturned, made an intravenous transfusion of 85 cc. of defibrinated blood in a patient who lay in deepest coma, with reflexes practically abolished. The first result was manifest on the following day in a return of the reflexes and consciousness, and with astonishing rapidity the patient recuperated, so as to be able to make a journey after several months. On the recurrence of a relapse about six months later the transfusion of 300 cc. of defibrinated blood was without effect.

To these two cases we should like to add Hoarth's statistics of thirty-nine cases in which the result was positive in seventeen, inasmuch as temporary improvement occurred immediately after. Among the cases showing negative results there were a great number, in which, as in Ewald's case, the transfusion was tried only as a last resort, or in which other severe complications were present.

Quoting from French (in Allbutts and Rollestne Sys. Med. 1909-V-754), "There are few maladies in which the results of treatment are more capricious. It is impossible to prophesy in any given case whether any given remedy will be useful or not. The reasons for frequent failure in one case and for its success in another are not known. Thus the success attending the use of red bone marrow, introduced by Sir T. Fraser, has been repeated by some physicians but never attained by others. A like diversity of experience is to be found in the records of cases treated often, no doubt, in the last resort by blood transfusion.

TECHNIC.

There are two methods of blood vessel anastomosis: (1) Suture method of Carrel. (2) Cannula method brought to its highest point of efficiency by Crile.

The former method is more tedious and requires greater skill. The latter affords time-saving element and only ordinary skill is necessary, and for these reasons is obviously the best method for temporary anastomosis.

The essential part of both methods is that the intima of one vessel comes into contact only with intima of the other. The use of interposed tubes increases the danger of thrombosis and with these I am unfamiliar.

Before taking up the matter of technic I might state the underlying principles which Carrel sets forth (*Johns Hopkins Hospital Bulletin* 1907-xviii), and here applies. It is known that failure in vascular surgery is mainly due to the formation of a thrombus. Pathologic physiology of blood vessels shows that thrombosis may be caused by an inflammation of the endothelium, by a wound even such as a slight crushing of the vessel, or by the presence of some foreign tissues or juices in the lumen of the vessel.

It is evident then that these conditions must be met with in their order, namely, by rigid asepsis, due regard for and an avoidance of injury to the delicate intima, liberal use of liquid vaseline, normal salt solution to protect the endothelial lining and to wash out small particles of foreign tissues or juices which are essential to formations of a clot, and perfect hemostasis catching up the small vessels.

The technic used in all three operations was that suggested by the work of Crile and Carrel, using Elsberg's modification of a Crile cannula, with which I had previous experience in the treatment of pellagra. We found this instrument most satisfactory, greatly simplifying the Crile technic. In all, three direct transfusions of blood were performed in the treatment of the cases. The blood of the donors was tested for hemolysis and found negative in each instance. The matter of agglutination was not considered. Crile incidentally states that this factor may be disregarded. A Wassermann test was not made, all three subjects being in excellent physical condition and of good color, their denial of blood taint seeming sufficient.

G. L., American, male, age 26, had complained of weakness during the past year. I saw him Nov.

1, 1911. He presented characteristic lemon-yellow color, suffering general weakness, restlessness, insomnia and in a slow state of muttering delirium. Blood examination at this time shows findings of progressive anemia, namely poikilocytosis, polychromatophilia, normblastic and an occasional megaloblast, r. b. c. 607,000, w. b. c. 1,800, hb. 20-30 per cent., c. l. 1.9.

The patient was removed to the City Hospital where, with assistance of Drs. Don Palmer, Ristine and Vemeer, direct transfusion was done, using patient's brother as a donor. His left radial artery was dissected free for about three inches in the wrist and the distal end anastomosed by means of an Elsberg cannula to the proximal end of left median basilic vein of the patient. A good connection was evidenced immediately by the pulsating vein and the heightened color in the lips and cheeks of the recipient which grew more marked as transfusion continued.

The blood was allowed to flow across for thirty seven minutes. Improvement noted. Hb. taken at intervals during this time rose from 20-30 to 60-70 per cent., r. b. c. 1,000,000 plus. At 8 p. m., seven hours afterward, r. b. c. 1,750,000. Blood-pressure increased. Day after transfusion passed 52 ounces of urine in twenty-four hours. Temperature, which on entrance was 102.6, returned to normal.

Condition one of general improvement for two days following first transfusion. On the third day he began to lose ground, again became delirious and had involuntaries.

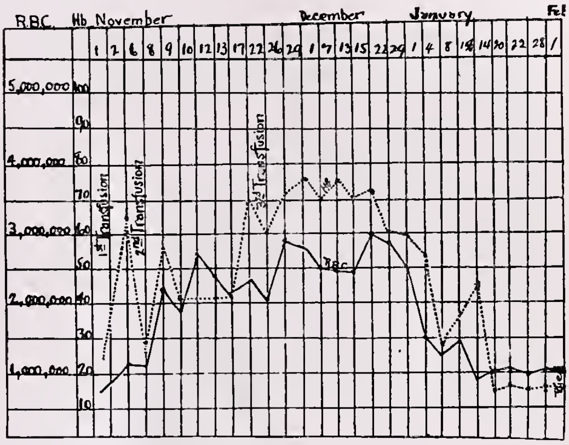
Nov. 6, Hb. 20-30, r. b. c. 1,114,000, when a second transfusion was performed. A full-blooded donor, G. S., a stranger, volunteered, Drs. Palmer and McLaughlin assisting, using Elsberg cannula as in preceding operation. Blood was allowed to flow forty-five minutes. Improvement noted immediately in quality of pulse. Hb. jumped from 28 to 60 per cent., r. b. c. from 1,114,000 to 2,224,000. Improvement quite marked during the week following, at which time full diet was relished. He looked, felt and rested better. Sallowness disappearing.

Nov. 16. Patient feeling fine, appears to be tided over this relapse. Temperature normal, pulse 88, hb. 70 per cent., r. b. c. 2,300,000. Blood smear showed less deformity of blood cells, as if more normal cells were being manufactured. Patient very much encouraged.

Condition fluctuated for the ten days following, during which r. b. c. dropped to 1,830,000, w. b. c. 3,500, hb. 60 per cent. Spleen was enlarged and tender. On Nov. 26 a third transfusion was done, a cousin, a good, large, healthy specimen, serving as donor. The same technic as before was used. The blood in a good stream was allowed to flow across for sixty minutes. Incidentally the donor sank to the floor when he attempted, in spite of remonstrance, to get up and walk.

Hb. rose during transfusion from 60 to 73 per cent., r. b. c. from 1,830,000 to 2,900,000, temp. 100°, pulse 110. Felt better but suffered from transitory restlessness. General improvement was noted for three weeks following and, on Dec. 15 r. b. c. rose to 3,000,000. Blood smear showed more nearly normal type of cells and minus the unfinished blastic cells. Hb. 70 per cent.

Dec. 21. Up and about for three days. Toward the end of December and during the month of January, however, in spite of the usual medicinal therapy of sod. cacodylate, hemabaloids with arsenic, Fowler's solution, red bone marrow and glycerine treatment, the patient grew progressively worse.



Dotted Line Hemoglobin Curve; Straight Line Red Blood Cell Curve.

The records of the case and the accompanying chart show that this measure was surely sustaining him more effectively with each transfusion. I should have liked just one more attempt on the theory that it might serve to lift the last straw, so to speak, and tide him over, but this did not appeal to his relatives and, therefore, our desire availed nothing. The patient died Feb. 1, three months after the first operation.

In the case of the last donor the ends of the radial artery were successfully anastomosed, using interrupted sutures of 000 black Chinese silk and the Carrel technic which was simplified much by the use of a tripod (devised by Pollock & Speidel, 1910) for holding the three guy sutures. The wound healed by primary intention and pulsation was felt below anastomotic point after two months, since which time I have lost track of patient.

Hemolysis. The tests used here were suggested by Dr. O. J. West, and consist of taking one drop of the washed red blood corpuscles of the recipient against ten drops of the donor's serum and vice versa, and watching for laking of blood macroscopically, concluding after two hours whether or not the donor will be suitable.

CONCLUSIONS.

By looking at the plotted curve of the r. b. c., there is graphically noted an improvement following each transfusion, the maximum improvement coming eighteen days after the third operation. These operations were undertaken with no great hope of success, but only with the idea of leaving no stone unturned and hoping that by this means, when all others had failed, we might possibly stimulate his blood-making organs sufficiently to tide him over a relapse into one of remission. It must be borne in mind the change which frequently occurs spontaneously, or after simple symptomatic therapy in equally severe cases, and we must recognize that the administration of the treatment and the beginning of remission may occur at the same time purely as a coincidence.

That this is a measure of palliative value I believe the records of this case clearly show. The beneficial effects, positive though temporary and used finally as a means of tiding a case in extremis over a relapse, are justifiable. When we look for an explanation of the favorable effect of the blood transfusion no satisfactory one can be found. To attribute the result to the introduction of living blood on the supposition that it is capable of taking up a part of the physiologic function is not compatible with the fact that extremely small quantities of blood have been found sufficient. Ewald suggests the hypothesis that the injected healthy blood acts as an antitoxin to an unknown poison circulating in the organism in progressive pernicious anemia.

With this lack of a theoretic foundation, what are the indications from the experiences so far reported for the employment of blood transfusion in progressive pernicious anemia? In cases which manifest a severe but not an immediately dangerous condition, other therapeutic measures should first be tried, especially arsenic, "606", etc. Only when these produce no result or their employment is impossible and the disease symptoms are evidently progressive, is transfusion to be done. It is likewise indicated in all severe exacerbations, in threatening collapse, and naturally in coma. When done with care no objection can be raised against it. From the observations so far made no injurious effect has been found apart from transitory incidental symptoms.

I wish to acknowledge and take this occasion to thank Dr. G. N. McLaughlin for his careful and accurate blood counts in this case.

702 Cobb Building.

BIBLIOGRAPHY.

Bramwell: Brit. Med. Journ., 1913, I, 1093.
Carrel: Johns Hopkins Hosp. Bull., 1907, XVII, 18.
Carrel: Johns Hopkins Bull., 1907, XVIII, 161.
Cole and Winthrope: J. A. M. A., 1910, April 23.
Crile: Hemorrhage and Transfusion Text-Book, 1909.
Curtis and David: Surg. Gyn and Obstet., 1912, XV 4, 480.
Dorrance and Ginsberg: J. A. M. A., 1911, LVII, 1560.
Elsberg: J. A. M. A., March, 1909.
French: Albutts and Rolleston Sys. Med., 1909, V, 754.
Goodman: Annals Surg., Oct., 1910.
Horseley: J. A. M. A., 1910, LV, 663.
Lespinasse and Fischer: J. A. M. A., 1910, LV, 1785.
Manning: Northwest Med., Aug., 1913.
Nothnagel's Ency. Pract. of Med., Am. Ed., 1905.
Ref. Handbook Med. Sc., 1909, VII, 846.
Archives of Pediatrics, Dec., 1912.
Watts: Johns Hopkins Bull., 1907, XVIII, 153.

REPORT OF A CASE OF STATUS EPILEPTICUS CURED BY DECOMPRESSION OPERATION.

By Donald A. Nicholson, M. D.
SEATTLE, WASH.

Miss M., single, eighteen years of age, unemployed.

Family history: Father died at the age of fifty-eight from apoplexy. Mother is forty years of age and healthy. One brother seventeen years of age, one brother ten years old, and a sister thirteen are all living and healthy. No history of cancer, tuberculosis, epilepsy, nervous or mental diseases in any of the relatives.

Personal history. She was always well and strong until twelve years of age, when she had a convulsion. A second occurred six months later and was repeated at similar intervals for two to three years, when she began to have attacks at intervals of thirty days and so continuing for three or four years. She never had more than one or two convulsions a day until August 7, 1913, when she had several attacks. The next day the attacks occurred every thirty minutes and the following two days about every twenty minutes. On the seventh day they were occurring at intervals of ten or twelve minutes and on the eighth day every three or four minutes. This history relates to both day and night.

I first saw her on August 13, seven days after the convulsions began. I gave her a grain of calomel in divided doses, followed by magnesium sulphate, an ounce of castor oil and two saline enemas of three pints each during the next twenty-four hours, from which were produced several free movements. She was given water freely and liquid diet only. I gave her twenty grains of potassium bromide every three hours for twenty-four hours, and during the following twenty-four hours she received thirty grains of bromide at intervals of two hours. She had two quarter grain doses of morphin and seven and one-half grains each of trianol and sulfonol. Yet the longest period free from convulsions in that time was thirty minutes.

The attacks always began by twitching of the muscles of the left side of the face, followed by turning the head to the left. There was a contraction of the left hand with flexion of the wrist, then the elbow and moving of the hand up to head, across face and down to normal position. The left leg began to contract soon after the hand. Then the right side became involved, making the convulsion general. The right side relaxed earlier than the left. The patient was always completely unconscious in the convulsion but became conscious within five or six minutes after it began and did not usually pass into a sleep before another convulsion appeared. The mother informed me that the convulsions have always started on the left side since the beginning, six years ago.

On August 15 there was performed by Dr. Alfred Raymond a decompression. He removed a large bone flap over the right frontoparietal area. On opening the dura there occurred a large cerebral hernia without rupture of the pia. The brain was edematous and tense but otherwise appeared normal. There were no adhesions of dura or pia. The bone was greatly thickened and in the outer table there was depression for a distance of two inches over the superior parietal region but the inner table was smooth. The mother denied any history of injury, as did the patient herself following the operation. She had several convulsions during the next forty-eight hours and a few mild ones for the next four or five days. Since then to the present date, a period of seven months, she has been entirely free from convulsions or spasms of any kind.

There was a paresis of the left side of the face, the arm and the leg for several hours before the operation, and a paralysis of these parts for many days after which at present has disappeared so that she has practically full use of all the muscles. There was a rise of temperature of from one to three degrees for several days after the operation, the pulse ranging from a hundred and ten to one hundred and forty for many days. Mentally she was much confused for ten days to two weeks and never has she been able to recall any of the events for twelve hours previous to the operation and twenty-four hours following it. The cerebral hernia seemed slightly lessened twenty-four hours after the operation and gradually diminished until at the end of a week it had entirely disappeared and has so remained to the present date.

When I first examined this girl I thought I was dealing with a case of status epilepticus but, as I continued to observe her, the regular order in which the convulsions appeared, with a paresis appearing in the side of the face as well as in the arm and leg, I thought of a localized cause in the nature of a new growth or scar tissue from cerebral injury to account for the epilepsy, and with that in mind I advised the decompression. When the dura was opened I felt certain, on account of the great pressure, that there must be a new growth under the cortex, yet as the days passed and the hernia cerebri disappeared, I came to the conclusion that we never had to deal with more than a cerebral edema and that our paralysis must have been the result of pressure from edema.

If we stop to consider the directness of the arterial flow, the general high blood-pressure in the cerebral vessels and the increased action of the heart during a convulsion, we can easily account for the large amount of blood entering the brain at this time. Then, if we remember that the veins are very thin, have no valves, are free from elastic tissue, and that the return flow is up hill to the longitudinal sinus where it finally empties against the blood stream, we can understand why the venous flow is so slow and the edema so great in such a case. As the continued edema is accountable for the intercranial pressure with its ill effect of paralysis, elevation of temperature, rapid pulse, pulmonary edema, exhaustion and death, it is not at all surprising that so many deaths occur from status epilepticus after forty-eight hours. In fact, one-quarter of all epileptics die in status epilepticus.

The question now arises of decompression being the proper treatment for this condition. I contend that in certain cases, where all ordinary means have failed to relieve the attacks, when the patient is young and not demented, we are justified in doing a cerebral decompression as the most rapid means of relieving cerebral edema. While this patient has been free from her attacks for seven months and feeling much better than for years, I can only explain it by the improved general care which she has had, for the operation could not have helped in any other way than as a relief in an emergency.

A NEW HAND-DRIVEN CIRCULAR BONE SAW INCLUDING A FLEXIBLE SHAFT THAT CAN BE ADAPTED TO VARIOUS USAGES.*

By Harry A. Shaw, M. D.
and
J. Tate Mason, M. D.
SEATTLE, WASH.

Along with a more comprehensive understanding of the histogenesis of bone, there has of recent years been devised a great number of most valuable and ingenious operations. Especial mention may be made of the original contributions to bone surgery of such pioneers as Macewan, Murphy, Lane, and Albie, as well as others too numerous to mention.

As our clinical knowledge is developing the trend of practice seems to be drifting toward the use of autogenous instead of foreign material to aid in the repair of bone injuries. The field is practically limited to the mechanical ingenuity of the individual operator, coupled with a perfect aseptic technic. With the increased number and variety of operations comes the natural demand for more suitable instruments. This demand is not so acute in the practice of those surgeons who are so fortunate as to possess one of the various motor-driven instruments and who operates in one hospital, where the current is always the same and attachments convenient, but it is demanded more by the average surgeon.

Realizing how absolutely essential the element of asepsis was in bone work, in fact the keynote to success, our first thought was to devise an instrument that would allow of complete sterilization, having no link such as electric wires or shafts to connect a sterile with non-sterile field. This we believe we have accomplished. Other points in the practical application and utility of this instrument are its compactness—as it can be carried easily in an ordinary surgical bag, and that it cuts in any angle, direction or depth, the latter being accurately controlled by a thumb-screw attachment.

Unlike an electric instrument, it depends upon no particular voltage, amperage or quality of current, and its efficiency does not depend upon any delicate electrical mechanism (short circuits, etc.) The flexible shaft has the advantage over the ordinary brace in the use of burrs, drills, etc., in that it can be used in the axis of the shaft of long bones without displacing the same from their normal bed, thereby preserving the blood-supply, eliminating dead space and conserving time and energy. Should, for any reason, it become desirable to change the saw it can easily be accomplished within half a minute.

During the experimental stage the friendly criticism was offered that a saw geared one to one would not develop the necessary efficiency. However, under many and varied applications we have found that the size, angularity and set of the teeth are the elemental factors in the cutting qualities. In fact, experience has taught us that the saw develops greater efficiency when it is propelled slowly. Last, but not least, our aim was to perfect an instrument that would be within the financial reach of the average surgeon, and should cost about one-sixth of the price of motor-driven instruments with no expense of upkeep afterwards.

PLATE ONE.

Fig. 1. (1) Flexible shaft. (2) Under surface of assembled saw. (3) Small gear which is inserted into body when saw is assembled as in Fig. 4. (4) Idler with spindle and crank. (5) Splint removed from tibia. (6) One of the pair of handles that can be inserted into the top, side or end of the body. (7) Saw with gear upon arbor as in Fig. 4 or Plate II, Fig. 11. (8) Trephine tmat can be attached to (9). (9) Spindle that is explained in Fig. 2 (2). (10) Saw with arbor on one side for undercutting. (11) Drill showing method of attachment to (9). (12) Subguard for dura. (13) Saw with arbor for ordinary work, viz., tibial splint, etc. (14) Guard for saw as in Plate II, Fig. 10.

Fig. 2. (1) Handle grip and flexible shaft connected. (2) Spindle which can be attached to flexible shaft same as arbor of saws and into which may be inserted drills, burrs, etc. (3) Saw-body into which the handles have been inserted, showing (a) pinion for removing or retaining saws, (b) thumb-screw for regulating the depth of guard, (c) guard for regulating depth of cut.

Fig. 3. Saw assembled, showing under surface and slip joint where saw arbor is connected with flexible shaft.

Fig. 4. Saw assembled with gear on side, making attachment of shaft high up, thereby allowing deeper cut. (Note Plate II, Fig. 11.)

Fig. 5. Saw assembled with subguard to protect the dura in skull work. (a) permanent guard, (b) subguard for protection of the dura. (Note Plate II, Figs. 12, 13, 14.)

Fig. 6. Saw assembled with lateral guard for undercutting. (Note Plate II, Fig. 11, for practical application.)

Fig. 7. Flote file, such as veterinaries use upon horses' teeth, which we have found invaluable in rounding or planing a splint for application into any desired cavity. Or body of saw may be clamped in small vice and splint trimmed as required, by holding same in forceps.

DESCRIPTION.

Body. The apparatus consists of a body into which can be inserted the various saws (Plate I, Fig. 2, D). To the under surface of this body is attached a movable guard (c), which regulates the depth of the cut by simple turn of thumb screw (b), as well as steadying the saw. In the top and sides are six holes, into which the handles can be adjusted at the angle best suited for guiding the saw. The saw can be instantly removed by

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*Read before King County Medical Society, Seattle, Wash., Feb. 2, 1914.

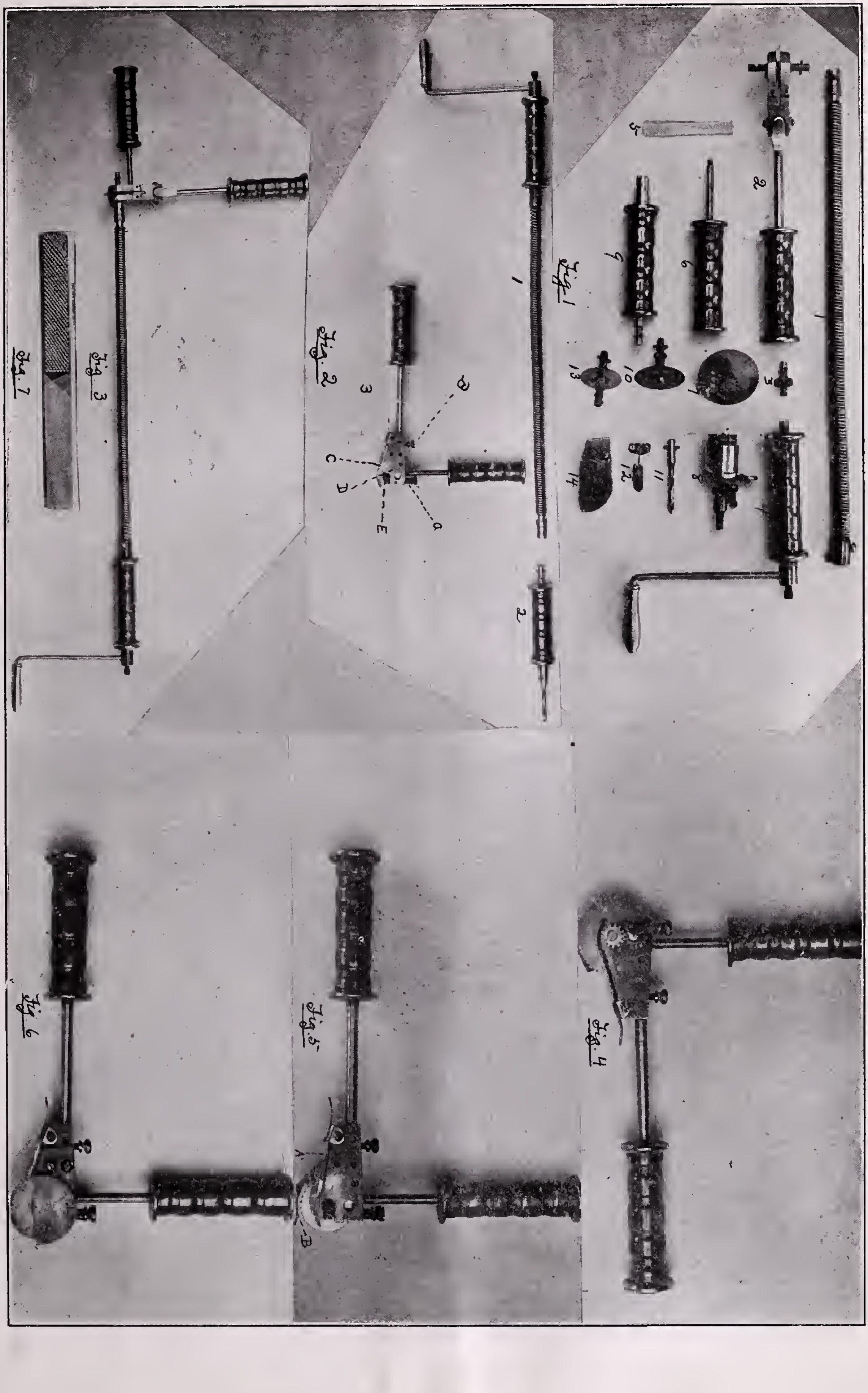
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PLATE ONE.

PLATE TWO.

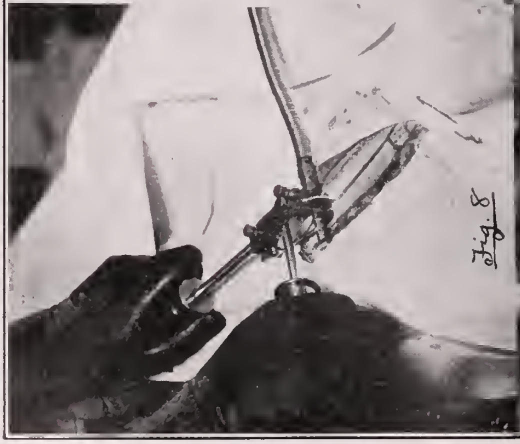

Fig. 8

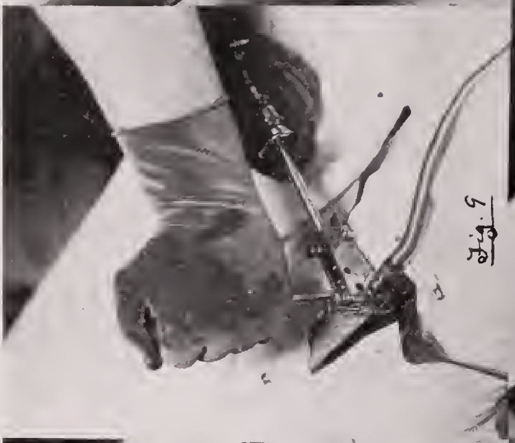

Fig. 9

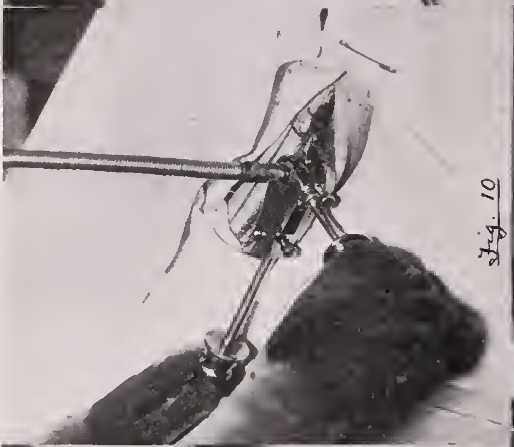

Fig. 10

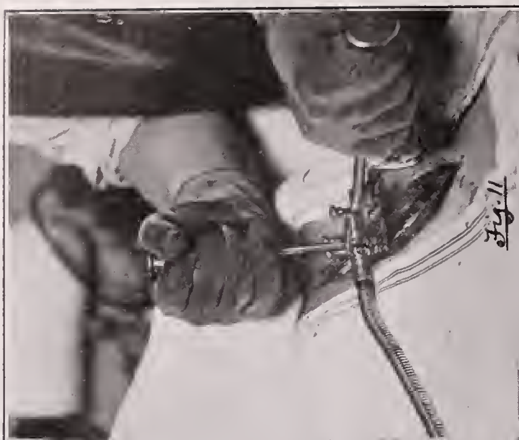

Fig. 11

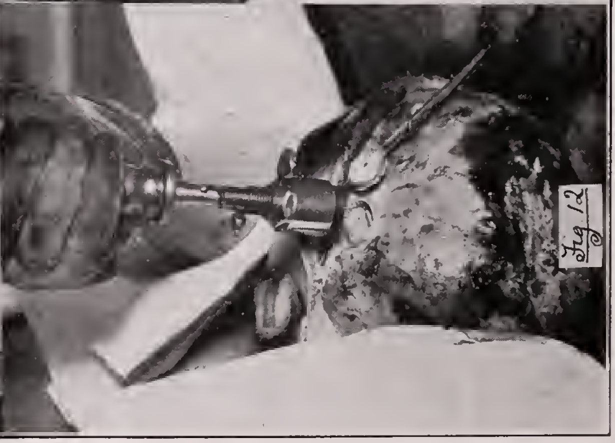

Fig. 12

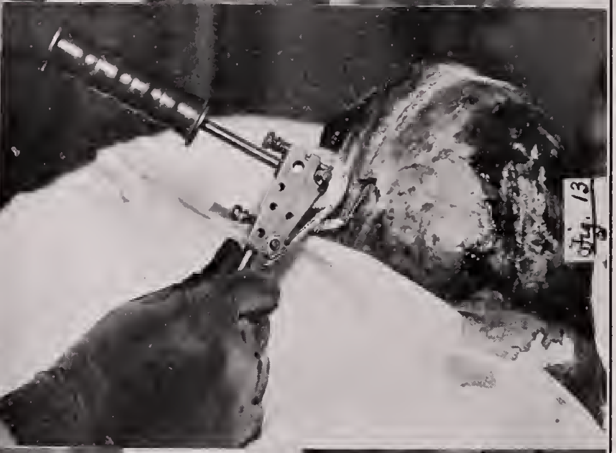

Fig. 13

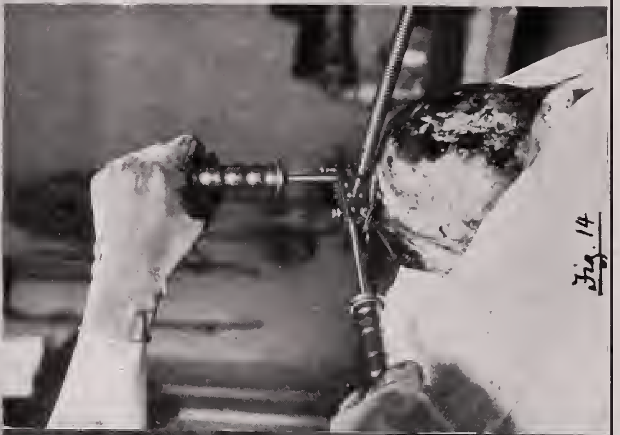

Fig. 14

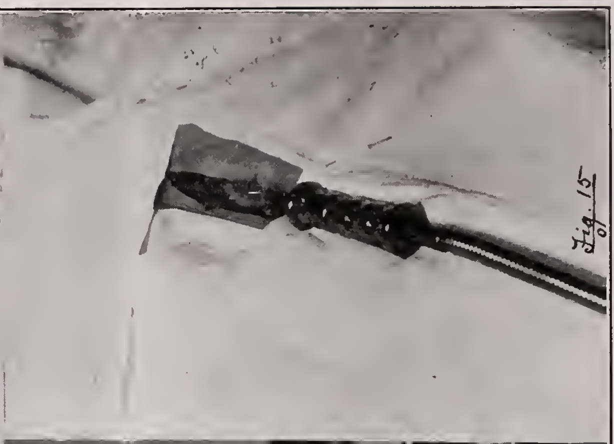

Fig. 15

making a quarter twist and raising the two small pinions (Plate I, Fig. 2, A).

For small work the additional guard is attached to the under surface of the permanent guard to protect the dura (Plate I, Fig. 5 B). On the left of the body is a small gear to which the flexible shaft is attached when deep structures are to be sawed. This permits the saw to sink to a lower level without causing an acute angulation of the shaft (Plate I, Fig. 4 and Plate II, Fig. 11).

Saws. These are the various sizes, fitted upon individual arbors to facilitate their quick change (Plate I, Fig. 1: 7, 10, 13).

Shaft. This is flexible and made with adjustable handle which is attached on one end and slip joint attachment on the other, which may be attached to the protruding arbor of the saw (Plate I, Fig. 2; 3 E), or to holder of drills, screw driver, burrs, etc. (Plate I, Fig. 2: 2).

PLATE TWO.

Fig. 8. Making cut upon anterior surface of tibia.

Fig. 9. Crosscutting bone in tibial splint.

Fig. 10. Undercut of tibia showing guard protecting soft tissues. (This undercut is unnecessary except where a very thin splint is required.)

Fig. 11. Splitting of spinous processes. (Note the depth permitted by application of gear on the side.) (See Plate I, Fig. 4.)

Fig. 12. Showing the trephine attached to flexible shaft and button of bone removed.

Fig. 13. Subguard for dura being inserted between dura and vitreous table.

Fig. 14. Saw in action upon skull.

Fig. 15. Showing the use of flexible shaft in reaming out the medulla without undue trauma or separation of bone from the surrounding soft tissues.

SUMMARY.

Instrument is compact.

It allows complete sterilization.

Cuts in any angle, direction or depth.

Depth of cut can be accurately controlled by thumb-screw attachment.

Unlike an electric instrument, it depends upon no particular voltage, amperage or quality of current and can be relied upon, as the personal equation compares with an electric apparatus.

Costs about one-sixth of price of motor-driven instruments, with no expense of upkeep afterwards.

The flexible shaft has the advantage over the ordinary brace in the use of burrs, drills, etc., as it can be used in the axis of the shaft of long bones without displacing same from their normal bed (See Plate II, Fig. 15). Saws can be changed easily in thirty seconds.

MEDICAL DEFENSE BY THE STATE ASSOCIATION.*

By Ed. E. Maxey, M. D.

BOISE, IDAHO.

The rapidly increasing frequency of suits for alleged malpractice against members of our profession makes the question of medical defense a more and more seriously important one, and I think is excuse enough for bringing this subject up for discussion at this time. None of us will deny, I think, that under present existing conditions there is a need for proper and safe insurance against these misfortunes. For a good many years we have had insurance companies ready and anxious to insure us against loss from such suits, but the growing tendency among these same companies to compromise the suits thus brought, together with a desire to cheapen the cost of such insurance, has caused a number of the state associations to provide a medical defense fund for the protection of their members.

Nineteen states (Kansas, Pennsylvania, Mississippi, New York, Michigan, New Jersey, Illinois, Vermont, Maryland, California, Missouri, Minnesota, Wisconsin, Iowa, Indiana, West Virginia, Nebraska, Kentucky, North Dakota) have within the last ten or twelve years adopted a medical defense plan for their members, and in all but two states (Mississippi and Vermont) the plan has been reported as proving satisfactory. Recently Texas and Washington have tentatively adopted the plan also.

A medical association, in adopting the medical defense plan, undertakes to defend suits for malpractice against any of its members, either paying all court costs and necessary legal expenses, or in some states, allowing a certain stipulated amount to assist in the defense, but in no case do they undertake or agree, as some of the insurance companies do, to pay any damages whatsoever that may be assessed or allowed by the court in case suit is lost, after appeal to highest court.

The protection afforded by the defense fund includes acts by assistants of the subscribing member, when legally responsible, when such assistants are not licensed physicians, but it is not the purpose of the association to aid in defeating any just claim which any person may have against any member of the association for malpractice, but will use all just and honorable means to bring about a fair settlement of any such case.

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*Read before the Twenty-first Annual Meeting of Idaho State Medical Association, Pocatello, Ida., Oct. 9-10, 1913.

The necessity for maintaining such defense fund arises out of the fact that nine-tenths of the suits brought against physicians for alleged malpractice are little less than blackmail, for experience shows that the great majority of such cases are brought without any purpose of prosecuting them to judgment, but only with the view of forcing the physician to settle rather than go to the expense and publicity of a trial. We are all interested in such litigation because every dollar paid in settling unjust claims is encouragement for others to attempt such extortionary methods. It is, therefore, the purpose of medical defense through the association to aid its mambers in defending against these attempts at extortion and, as all members are at least indirectly interested, it has been thought to be no more than just that all the members should contribute to aid in such defense.

As stated above, medical defense has been of distinct advantage to the members in at least seventeen of the nineteen states that have adopted the plan, but in all these states the associations have a membership ranging from 332 in North Dakota to 7,200 in New York, and the question naturally arises, would such a plan be practical in our own state with an association membership of about 100? Would it not prove too great a burden for us, even if our membership could be increased to 150 or 200? The per capita cost in these states ranges from 25 cents per year in Pennsylvania (5985 members) to $2.00 in Vermont (400 members). In California the fund is raised by assessment on the 2278 members and the annual cost is about $2.00, while in Washington, under their proposed plan of organization, at least 400 members must subscribe to the fund agreeing to contribute not more than $5.00 each year. On the basis of our present membership of about 100, if each member was assessed $5.00 annually, the defense fund would be $500 each year. As nearly as I can approximate the costs, the association would have to retain an attorney by the year ($250), stationery and stamps, about $25, traveling expenses, $50, which would leave about $175 to apply on defense of individual cases for court expenses and local attorney's fees.

It would seem, therefore, that the best we could do, without making the annual assessment more than $5, would be to allow a specific amount, say $100, or less, for the defense of each case. I have asked several of the defense companies to figure on expense of insuring our entire membership, but none of them would quote any reduction over their regular contract price. They claim that the number of malpractice suits filed has increased during the last few years to an alarming extent, and that they will continue to increase each year so long as some of the companies continue to follow the policy of compromising cases whenever possible.

I am informed also that in every state, where the state association has a defense fund, the majority of the leading members are not depending on the state society entirely for their defense. So, in any event, it is the consensus of opinion in insurance circles, that the state society defense fund is only supplementary and that, with the limited means at their disposal, they are unable, except in the more populous states, to provide their attorneys with the information and citations necessary to conduct a case successfully, nor are they able to eliminate the expense of defense entirely.

Judging by the percentage of affirmative replies received by me in reply to recent circular letter it is evident that a majority of our members who took the trouble and time to make a reply are in favor of the association providing a defense fund. But I am satisfied also that most of the members making affirmative reply have done so without giving the subject thorough consideration for, after an extensive investigation of the workings of such a defense fund in other states, I have reached the opinion that the time has not yet come for the Idaho State Medical Association to adopt this plan. Our membership is too small and the benefits would necessarily be too limited to justify the extra financial burden on the members.

NOTICE.

The sixteenth annual meeting of the American Proctologic Society will be held at Atlantic City, N. J., June 22 and 23, 1914. The society is now a branch of the A. M. A. An unusually interesting program is assured. W. H. AXTELL, M. D.,
Bellingham, Wash.

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MAY, 1914.

EDITORIAL

ABOLITION OF THE SALOON IN OREGON AND WASHINGTON.

The warfare against the traffic in alcohol which is now being conducted in Oregon and Washington is of such a character that the careful observer will be impressed with the fact that at the November election it is very probable prohibition of the manufacture and sale of liquors will be carried in these two states. Advocates of prohibition in past years have made this a political issue which at times has involved much bitterness. In recent years we have seen the political importance of the subject gradually eliminated, while the moral and economic aspects have loomed large in the horizon. It has now come about that commercial as well as reform interests realize the deplorable and baneful effects of the consumption of alcohol by the people of our land. So acute has this feeling become that we find in many communities a combination of interests aiming to eliminate the use of alcohol, supported by those who themselves are not abstainers and who can in no sense be classed as reformers or prohibitionists. Recognizing as they do the demoralizing and depraving effects of alcohol on the human system, no class of our citizens is in a position to so thoroughly appreciate the evils of this traffic as physicians. None realize so clearly as we the overpowering role which alcohol plays in disease and death, both directly by its own effects and as an influence for the introduction of other diseases whose results are far reaching and permanent. While the matter of producing total abstainers in the individual is not an issue, however desirable and beneficial such a result might be, the present efforts aim toward the suppression of the manufacture of alcoholics in these states and the elimination of the saloon which is the most demoralizing and indefensible institution in the whole land. While it is not our intention to pose as a reformer or a censor of the morals of our fellows, we cannot refrain from taking the opportunity of urging upon the medical profession the desirability of cooperating as a body in the accomplishment of the purposes of this movement. The physician above all others in the community is devoted to the propagation of all measures that will promote the well-being and good health of the citizens and to the suppression of all factors antagonistic to these results. Therefore we can foster no measure more consistent or harmonious with this policy than to encourage the suppression of the traffic in alcohol.

THE CHILD WELFARE EXHIBIT IN SEATTLE.

A Child Welfare Exhibit will be held in the Seattle Armory, May 22-30. this will be the first time such an exhibit has been conducted on the Pacific Coast, although similar ones have been held in a number of the Eastern cities during recent years. An exhibit of this nature is of special interest to physicians, as is anything concerning the growth and development of the child. While such an exhibit at the same time interests the general public, the health exhibit will be the feature appealing most directly to the medical profession. This will include charts, exhibitions and daily lectures portraying the proper and improper manner of feeding and rearing children, giving graphic demonstrations of the preparation of foods during the different stages of childhood, matters pertaining to correct dressing of children and allied subjects. Special emphasis will be laid on the preparation of pure milk, with demonstrations from the cow stable to the consumer. There will be models of sanitary and insanitary dairies, milkmen and milk preservation. These, with many other features, will make this exhibit of special interest and value, so that it will be well worth while to attract the attention and study of all physicians who are able to visit it.

THE MEDICOLEGAL BUREAU OF THE A. M. A.

The Council of Health and Public Instruction of the American Medical Association has established a medicolegal bureau for the purpose of collecting and arranging all material bearing on medicolegal questions of interest to physicians or relating to public health matters. The bureau desires to secure all available pamphlets, booklets, monographs, circulars, legislative bills, laws or reports on any medicolegal or public health topic.

The bureau will be prepared to furnish information to any desiring it on any of the above subjects. It is planned to make this bureau of service to the officials of state boards of health, medical examining boards and others. It is desired that any of our readers having information or contributions of a medicolegal nature shall send the same to this bureau.

CHANGES IN OUR JOURNAL.

With this issue we inaugurate changes in the appearance of this journal, the chief one being the slight reduction in the dimensions of the printed page, in order that the size of the journal may conform to that which has been adopted as the standard for the state association journals. One advantage is that this enables advertisers to prepare electrotypes of a uniform size for these different journals. We have adopted a new style of type which we believe our readers will find clearer and more attractive than what has been hitherto employed. A few minor changes in style will be observed which aim to improve the attractiveness of the pages.

MEDICAL NOTES

OREGON.

The Portland Pathological Society met in the medical department of the University of Oregon, March 6. The constitution, for preparation of which a committee had been appointed, was presented and adopted.

The following officers were elected: President, K. A. J. Mackenzie; vice-president, R. L. Benson; secretary-treasurer, J. Earl Else.

Dr. Slocum reported a case of carcinoma of the intestines. Dr. Mackenzie described a case of double empyema, upon which he performed a double thoracotomy with successful results. Two other similar cases were operated upon, both of whom died. He reported a case with empyema on one side and serofibrinous exudate on the other. He reported a method of injecting liquid paraffine into the chest to displace pus.

Dr. Else read a paper on Strictures of the Gall Bladder. Wax casts were displayed, showing that these cases may be congenital. The paper was discussed by Doctors Benson, Slocum, Whiteside, Dillehunt, Buck, Mackenzie and Menzies.

The Annual Meeting of the Alumni Association of the medical department of the University of Oregon will be held in Portland, June 1-3. Arrangements have been made for clinics and papers on medical and surgical subjects. Arthur D. Bevan is expected to be present as the guest of honor.

The McMinnville Hospital has been reopened under the direction of Mrs. Bertha Warren. The building has been remodeled and refinished and the grounds surrounding it are to be beautified in the near future.

Hospital at Enterprise. Drs. C. T. Hockett and S. D. Taylor have bought the old court house property at Enterprise and will convert the building into a modern hospital for the use of the physicians of the surrounding territory.

A Cancer Census. The State Board of Health is making preparation to take a cancer census of the state. This is the first thing of this kind which has been done in any state and is expected to give valuable data as to etiology.

A case of pellagra has been reported from near Troutdale. It is not thought to have originated in the state, as the patient recently came from Illinois.

Dr. P. H. Fitzgerald, formerly superintendent of the Oregon State Tuberculosis Sanatorium, has returned from a postgraduate course and will resume his practice in Salem.

Dr. Findley, who has resided in Grants Pass for the past twelve years, will move to Salem. Dr. L. O. Clement will take his place.

Dr. Charles A. Ballard has been appointed chief surgeon and sanitarian for the government work on the Tillamook jetty.

Dr. Leon W. Hyde, who has practised for eight years in Portland, has located in Hillsboro.

WASHINGTON.

The Firland Tuberculosis Sanatorium. Seattle's tuberculosis sanatorium at Firland has been completed with the exception of some features that are essential before the reception of patients. Thus far $212,000 have been expended and $40.000 more are required for its entire completion. A monumental and elegant administration building has been erected, together with a complete power plant of concrete, which will be sufficient to maintain a hospital for 350 patients. One building for the reception of patients has been completed which will accommodate 92. The institution is of a character unequalled by anything in the West. The appointments are complete and perfect, great attention having been paid to detail. When the institution is completed and open for patients, we shall present an extended description of it, with suitable illustrations.

Tuberculosis Sanatorium at Spokane. The Spokane county commissioners have decided to proceed with the building of the county tuberculosis sanatorium. The matter of site has not been definitely decided. The institution will be upon the pavilion plan with a central administration building in which will be offices and living quarters of the superintendent, nurses and other employes, and also dining rooms, kitchens, etc. It is planned to spend at this time $40,000.

The Pierce County Tuberculosis Sanatorium. The new tuberculosis sanatorium of Pierce County will be located about one mile east of Lakeview. Plans are being perfected for a structure which will accommodate about eighty patients. It is said the plant is to cost $20,000 and to be ready for occupancy within three months.

Seattle's Isolation Hospital. On the city property at Firland is being erected an isolation hospital for the treatment of contagious diseases, with an accommodation for twenty patients. This will meet one of the needs most pressing in Seattle for many years. The building is erected on the plan of the isolation hospital at Providence, R. I., and contains all the latest and most modern features of such an institution.

Seattle Obstetrical and Gynecological Society. Meetings of this society were held at the University Club on March 11 and April 8. At each meeting the recent literature was reviewed and discussed, and at the April meeting Dr. Carroll opened the discussion of the subject, "Under What Conditions Is It Necessary to Prohibit Pregnancy?"

Seattle Medical Inspection of Schools. Dr. Ira C. Brown, formerly of the U. S. Reserve Corps, has been appointed medical director for the Seattle public schools, at a salary of $300 per month. The work of school-health, sanitation and medical inspection of pupils which was formerly done by the City Health Department with the assistance of ten physicians who acted as medical inspectors, has now been taken up by the school board and will be handled by Dr. Brown with a corps of school nurses.

Death from Rabies in Tacoma. The death of County Commissioner Martin, of Pierce County, from rabies, has finally aroused the authorities to the gravity of the situation and active measures are being taken in the matter of dog muzzling.

Public Health in Spokane. Dr. J. B. Anderson, City Health Officer of Spokane, believes that public health matters should be given publicity. He finds a thorough understanding by the public of his recommendations as regards sanitation and of the evils which he is attempting to correct are of greatest assistance to his department.

The Plague Situation. Dr. Glennan, assistant Surgeon-General of the United States Public Health Service, has been on a tour of inspection throughout the Northwest. He has found the work of his department efficient and is well satisfied with the situation as regards plague in the Puget Sound district.

Alaska Inspection of Vessels. Rigid medical inspection of all vessels clearing from Sound ports for Alaska is being enforced by the U. S. Public Health Department. All passengers and crew must show satisfactory evidence of vaccination before being allowed to proceed.

Typhoid Immunization. Pursuant to an order of Governor Lister and the Adjutant-General, all members of the National Guard of Washington will be immunized against typhoid. This will be done at the expense of the state.

Fire in Hospital. Hoquiam General Hospital was considerably damaged by fire in March. The fire was confined to the offices and X-ray room and did not cause disturbance in the wards.

Doctor as Councilman. Dr. M. B. Mattice has been elected to the city council of Anacortes, to take the place vacated by the resignation of Melville Curtis.

Dr. G. F. Midford, of Port Townsend, has shipped his equipment to Douglas, in Southeastern Alaska, where he will locate.

Dr. C. Sandwith, of Anacortes, was seriously injured in a collision last month.

IDAHO.

Licentiates of the Examining Board. The following applicants passed the January examination of the Idaho Medical Examining Board: A. M. Frank, C. P. Groom, A. G. Cooke, R. A. Morse, H. H. Leete, C. F. Noble, C. L. Powell, R. W. King, C. W. Bice, C. C. Mills, J. B. Kirby, Arthur L. Salmon, J. W. Storey, F. A. Dwight.

Dr. J. W. Henderson, of Post Falls, has bought the practice of Dr. W. Mighell, of Colville, Wash.

REMEDIES ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY.

During the month of April the following preparations were accepted for inclusion in New and Nonofficial Remedies:

Normal Horse Serum—H. M. Alexander & Co.

Causticks, Caustick Applicators, Cupricsticks and Stypsticks—Antiseptic Supply Co.

Erepton—Farbwerke Hoechst Co.

Thiocol Tablets—Hoffmann LaRoche Chemical Works.

Acne Serobacterin, Coli Serobacterin, Neisser Serobacterin, Pneumo Serobacterin, Scarlatina Strepto Serobacterin, Staphylo Acne Serobacterin—H. K. Mulford Co.

New Bornyval—By Riedel & Co.

Phenolphthalein Agar—Reinschild Chemical Co.

Sodium Biphosphate, Squibb—E. R. Squibb & Sons.

REPORTS OF SOCIETY MEETINGS

OREGON.

PORTLAND CITY AND COUNTY MEDICAL SOCIETY.

Pres., A. W. Moore, M.D.; Sec., G. S. Whiteside, M.D.

The regular meeting of Portland City and County Medical Society was held at Portland, Ore., April 1, 1914, with President Moore in the chair. Members present: Drs. Bilderback, Labbe, Kistner, Parker, Wellington, Kiehle, Rockey, Johnson, Myers, Payne, Amos, O'Day, Sternberg, C. C. Moore, Buck, McClure, Browning, Wood, MacGavin, Nelson, Williamson, Wright, Sabin, Koebler, McLaughlin, Webster, Manion, Spencer, Barbee, Bristow, P. Rockey, Benson, Shea, Pettit, Brooke, Hubbard, Nelson, Coffey, Hayes, R. G. Hall and Whiteside.

Minutes of preceding meeting read and accepted. Minutes of council meeting read and accepted. Proposed for membership. J. T. Wood. Elected to membership, A. F. McGinn, C. T. Ross and N. W. Benyas.

CLINICAL CASE.

Pellagra. Dr. Parker shows this case in a woman from the country, with the characteristic skin lesions and malaise.

Discussion deferred until later in the evening.

PAPERS.

Congenital Pyloric Stenosis. By Dr. Bilderback. Report of five cases. Details symptoms and pathologic findings at operation and at autopsy. Shows one specimen and several x-ray bismuth plates. Cardinal symptoms is forceful vomiting which is very persistent. Constipation always present. Always a progressive loss of weight. Lavage and enemata advised for a week in spite of the fact that delay greatly adds to the hazard of the surgical interference which later may be done. X-ray plates taken with child in vertical position. Reads reports of many operations, showing a mortality varying from 13 to 100 per cent. Reports one case in detail.

Discussion: Dr. Labbe says persistent vomiting visible peristalsis and progressive loss in weight is suggestive. The case should be examined directly after a feeding, as this is the only time the peristalic wave can be detected.

Dr. Weber thinks mortality greater under operative treatment in proportion of 5 to 1. In a child, when all the tissues are growing, the pylorus may grow wider in a few weeks if the child can be carried over for that time.

Dr. A. E. Rockey thinks these cases in the past have been overlooked. Quotes three cases reported by Eagleson and McKechnie. Dr. Rockey operated on several cases later in youth which were probably recoveries after medical treatment of this condition in childhood.

Dr. Coffey does not consider the operation difficult. Advises washing the stomach before operation. In these cases the pylorus feels very hard. In x-ray pictures taken after operation the bismuth passes through the enterostomy opening and the pylorus always remains closed permanently.

Dr. Bilderback thinks medical cases with 100 per cent. recovery are all cases of pyloric spasm. Surgery is the only proper method of treatment.

The Percentage Method of Infant Feeding. By Dr. R. G. Hall. The paper deals entirely with percentage feeding and not other methods. Mother's milk, wet nursing and afterwards cow's milk modifications is the order of preference. Accuracy is essential. Demonstrates a chart for calculation of percentage

Dr. Amos says the composition of human milk is the same during the whole nursing period. He therefore believes that a modification suiting the child in early days will be proper for the first eight months. Tells an empiric method by which he has had good success.

Dr. Labbe approves modified milk as obtained in cities where there is a Walker-Gorden laboratory. In home modification we have to make up a formula and calculate the percentage afterwards. This chart should be of great assistance.

Dr. Hall. in closing, thinks it necessary to use extreme accuracy and shows how to use the chart even if one or more of the food elements is in unknown quantity.

WASHINGTON.

CLALLAM COUNTY MEDICAL SOCIETY.

Pres., F. S. Lewis, M.D.; Sec., D.E. McGillivray, M.D.

The annual meeting of the Clallam County Medical Society was held in the offices of Dr. D. E. McGillivray, Port Angeles, April 21, 1914. Meeting was called to order by Dr. F. S. Lewis.

The following officers were elected for the ensuing year: President, David H. Craig, Port Angeles; secretary, William H. Taylor, Sequim.

It was decided to meet regularly throughout the summer on the third Tuesday of each month, alternating between Port Angeles and Sequim. Dr. M. Harrison was elected an honorary member.

After the business session the members adjourned to the Olympic Cafe, where, as guests of Drs. McGillivray and Craig, they were served a sumptuous repast.

KING COUNTY MEDICAL SOCIETY.

Prest.. D. H. Palmer, M.D., Secty., G. W. Swift, M.D.

The regular semi-monthly meeting of King County Medical Society was held in Seattle Chamber of Commerce, April 6, 1914. Meeting was called to order by the president, D. H. Palmer, 91 members being in attendance. Minutes of the previous meeting read and approved.

PAPERS.

Localization of Foreign Bodies. By J. H. Snively.

Discussion: B. B. Burwell, N. D. Pontius.

Cystocele in Women. By G. S. Peterkin.

Discussion: A. C. Martin, H. J. Davidson.

Gastrointestinal Röntgenoscopy. By H. B. Thompson.

Discussion: C. S. Leede, A. P. Lensman, J. H. Snively.

Drs. Mabel Seagrave, R. France and R. H. Lyon were elected to membership. Application of Clyde T. Smith was read.

A motion was made by J. H. Snively that, inasmuch as certain individuals and newspapers have complained of the conditions and management of the County Hospital, and have cast reflections of inefficiency upon superintendent and staff, a committee of five from King County Medical Society be appointed to go out to the hospital on a tour of inspection, and report to the society the conditions as found and make any recommendations looking toward betterment of these conditions. Seconded and carried. Committee appointed was Drs. Dudley, O'Shea, Kelton, Speidel and Redon.

The second regular meeting of the society was held April 20, 103 members being present. Meeting was called to order by the president, Don H. Palmer, at 8 o'clock. Minutes of the previous meeting were read and approved.

PAPER.

Tic Douloureux of Twenty-five Years' Duration. By H. J. Davidson. Operation by Dr. Harvey Cushing, of Boston, with complete recovery.

CLINICAL REPORTS.

Double Uterus. By J. M. Osborn.

Abdominal Pregnancy. By Grant Calhoun and C. A. Martin.

Discussion: H. D. Dudley, J. D. Lyons, F. N. Chessman, R. J. O'Shea, F. L. Horsfall and George Dowling.

Report of committee appointed to investigate the County Hospital was deferred for two weeks.

R. J. O'Shea made some remarks relative to the ball to be given on April 22.

Clyde T. Smith was unanimously elected to membership in the society.

Dr. Charles P. Noble, of Philadelphia, addressed the society upon the subject, "Things that I have learned to unlearn and certain things I have learned."

LEWIS COUNTY MEDICAL SOCIETY.

Pres., J. M. Sleicher, M.D.; Secy., Rush Banks, M.D.

At the last regular meeting of the Lewis County Medical Society the following officers were elected: President, J. M. Sleicher, Chehalis; vice-president, David Livingstone, Centralia; secretary and treasurer, Rush Banks, Centralia.

The regular time for meeting was changed to the second Monday of each month. The place of meeting is to be Centralia and Chehalis.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Pres., R. W. Perry, M. D.; Sec., E. B. Burwell, M. D.

The regular monthly meeting of the academy was held at the office of the president, following a dinner at the Hotel Savoy. The minutes of the former meeting were read and approved.

Dr. Stillson exhibited a six weeks fetus showing the development at that stage of the eye, ear and nose.

Dr. Pontius showed the case of a man injured by a rock falling on his head two years ago. Was unconscious for a short time. Six months later he discovered loss of vision in left eye. Several weeks ago noticed a blurring of right eye when working on books. Refraction + 1.75s under homatropin — V = 20/20. Accommodation and visual fields O. K. Wassermann and urine neg. X-ray neg. The left eye showed a cloudy vitreous with large floating opacities. The nerve head was blurred and there were some areas of atrophy of retina and choroid. The right eye showed a blurring of the nasal side of the disc and fullness of the lymph sheaths. Was the condition of right eye a beginning sympathetic trouble or a result of the hyperopia?

Dr. Stillson considered that, as both eyes seemed quiescent and there were no other disturbances, he would correct the refractive error and assume a policy of watchful waiting. Dr. Greenstreet and Dr. Swift thought there was too much change in the disc to be due to hyperopia.

Dr. Swift showed a case of a man, with a history of diabetes, suffering the last eight months with an attack of iridocyclitis and deep keratitis following dust in the eye. Had not improved under any treatment. Are operative measures such as iridectomy indicated?

Dr. Perry considered an iridectomy would do no harm but the outlook was gloomy. Dr. Pontius thought the diabetes was responsible for the condition and the eye should be removed at once on account of danger to the other eye. Dr. Gray thought the nose should be treated as it might be a factor in the causation of the trouble. Dr. Burwell thought that, as the iris was bound down and atrophied and iridectomy would be difficult if not impossible and on account of the danger to the other eye, its inflamed condition and the minus tension, it should be enucleated.

Dr. Burns exhibited a man who had had several painless attacks of inflammation in the right eye leaving him with blurred vision. Has a moderate haze of cornea involving pupillary area. Requested opinions as to the etiology.

Dr. Perry thought absorption from tonsils or carious teeth an important factor in corneal troubles. Dr. Swift thought this might be a case of disciform keratitis in spite of the absence of pain.

Dr. Burns showed a case of a man injured two months ago. Complained of failing vision in right eye past two weeks. V. O. D. 20/200. Fundus showed a marked neuroretinitis with a number of hemorrhages into the retina. Dr. Klemptner thought a Wassermann should be done and the sinuses examined.

Dr. Stillson mentioned the convention of the Pacific Coast Opthalmological Society at the Hotel Washington, July 1-3. There will be a room for exhibits and would like exhibits for display by the members.

The president appointed a committee of Drs. Dowling, chairman, Gray and N. P. Wood to investigate the status of gonorrheal ophthalmia in the State of Washington and to report at the next meeting.

Dr. Pontius read a paper on the Ocular Symptoms of Hysteria.

Dr. Plummer reported a number of cases illustrating the ear, nose and throat symptoms of hysteria.

Dr. Greenstreet said that hysterical manifestations were not very common in this part of the country. Spoke of a case of triplopia he had seen.

Dr. N. P. Wood reported a case of aphonia of hysterical origin.

SOUTH IDAHO DISTRICT MEDICAL SOCIETY.

Pres., G. D. A. Kellogg, M. D.,; Secty., R. L. Glase, M. D.

The regular spring meeting of the South Idaho District Medical Society was held at Caldwell, April 28, in the rooms of the Caldwell Commercial Club. In the absence of both president and vice-president, Dr. J. W. Gue, of Caldwell, was, on motion, called to preside, and in assuming the chair he very graciously welcomed the visiting physicians to his city.

The minutes of last meeting were read and approved, as was also the annual report of the Secretary-Treasurer. The applications of Drs. E. P. Oldham, of Oakley, and J. Carl Hill, of Boise, for membership were received and favorably acted upon.

The following scientific program was presented and quite thoroughly discussed:

The Significance of Paroxysmal Dyspnea of Cardiac Origin. By Dr. M. H. Tallman, Boise.

Osteomyelitis, with X-Ray Plates. By Dr. S. W. Forney, Boise.

Some Infections from Tick Bite. By Dr. C. L. Dutton, Meridian.

Carcinoma of the Beast. By Dr. James L. Stewart, Boise.

Indications for Removal of Tonsils. By Dr. Ed. E. Maxey, Boise.

What We Owe Our Patients. By Dr. Mary Donaldson, Boise.

After the papers a brief address was made by the state bacteriologist, Dr. Ernest E. Laubaugh, in which he called particular attention to the needs of the state laboratory and the work it was doing.

The officers elected for coming year were: President, Dr. S. J. Miller, of Caldwell; Vice-President, Dr. J. L. Reynolds, of Emmett; Secretary-Treasurer, Dr. R. L. Glase, of Boise, re-elected; Members of Executive Committee, Dr. J. L. Stewart, of Boise, and Dr. C. L. Dutton, of Meridian; Member of Nominating Committee of State Association, Dr. Ralph Falk, of Boise; Members of Nominating Committee of this society, Dr. J. M. Wheate for Ada County, Dr. R. H. Wright for Blaine County, Dr. J. M. Henry for Canyon County, Dr. A. F. O. Nielson for Cassia County, and Dr. J. B. Kenagy for Lincoln ounty. Next meeting will be held in July at Boise.

The entertainment committee, consisting of the physicians of Caldwell, entertained the visiting physicians at the Saratoga Hotel, where a very excellent dinner was served for their benefit and enjoyment. Before the meeting adjourned a vote of thanks and appreciation was tendered the physicians of Caldwell and the Caldwell Commercial Club for the excellent manner in which they had assisted in making the meeting a success.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

A Reference Handbook of the Medical Sciences. Embracing the entire range of Scientific and Practical Medicine and Allied Sciences. By various writers. Third edition, completely revised and re-written. Edited by Thomas Lathrop Stedman, A. M., M. D. Complete in eight imperial quarto volumes. Volume III. 934 double-column pages, illustrated by 659 engravings and seven full-page plates in colors. Wm. Wood & Co., New York.

The Reference Handbook is too well known to need any introduction. It fills a need not supplied by any of the special books in a doctor's library in furnishing accurate information on such subjects as are to be found in the present volume, namely, articles on health resorts and mineral springs, climatology, biographies of physicians of modern and ancient times, criminology and asexualization of criminal and defectives, disinfection, etc. The special articles are unusually well written and are thoroughly up-to-date. There is a most interesting one, for instance by Kemp, on the various phases of colon infections, with case histories and special treatment, which is of great value and hardly to be expected in an encyclopedia of medicine. The names of a few of the writers of the 539 individual articles in this volume, taken at random, will be sufficient guarantee of the worth of the matter—Bulkley, Cabot, Dana, Delavan, Dock, Hall, Howell, Jackson, Kemp, Knox, Minot, Park, Vander Veer and Wathin. The embryologic articles by Minot are worthy of special notice. In this volume will be found diseases of the ear and external eye, with many beautiful plates exhibiting pathologic conditions. The volumes comprising the Reference Hand Book of Medical Sciences should be in the library of every physician and only the sternest financial necessity should be permitted to bar it out. Winslow.

Treatise on Diseases of the Skin. For the use of Advanced Students and Practitioners. By Henry W. Stelwagon, M. D., Ph.D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Seventh edition, thoroughly revised. Octavo of 1,250 pages, with 334 text-illustrations, and 33 full-page colored and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00 net; half Morocco, $7.50 net.

This text-book has been acknowledged for many years as one of the leading treatises in this particular branch of medicine. That there has been a great demand for it is attested by the fact that 1914 heralds its seventh edition. That the author merits such recognition will be freely admitted if a careful perusal of the contents of the volume be made. No advance in cutaneous medicine has escaped the keen observation of the author and on no occasion has he deviated from the well-balanced conservatism which has characterized all his writings. Much that is old and obsolete has been eliminated. Descriptions of recently acknowledged affections are presented for the first time, among which may be mentioned prurigo nodularis, sarcoid, etc. Exhaustive articles on pellagra and sporotrichosis are also given. None of the newer therapeutic agents are omitted, information as to their indications and limitations being carefully and concisely described. The illustrations are of a high order and there is not a line of printed matter in all the 1250 pages which is not absolutely essential. It is unnecessary to recommend this text-book; it speaks for itself. REDON.

Treatment of Chronic Leg Ulcers; a Practical Guide to Its Symptomatology, Diagnosis and Treatment. By Dr. Edward Adams. 122 pages. Cloth, $1.00. Published by The International Journal of Surgery Company, 100 Williams Street, New York City.

This small brochure should be well received by the medical profession. It deals with a subject to which larger text-books deign to devote only casual mention. Chronic leg ulcers are met only too frequently in the every-day practice of the general physician. The management of such cases often tries one's resources to the utmost. In this book can be found much that will prove of the greatest value in curing these intractable conditions. For example, the method recommended for the treatment of the common varicose ulcer, if followed out according to directions, will in itself repay one for the time consumed in reading the book. The author has given the result of his vast experience expressed in but a few words. Only those measures which have given the best results in a large number of cases have been described. There are no preliminaries. With the exception of a few hints on diagnosis the entire book is devoted to treatment. It is worth while and should be in the library of every physician. It cannot be too highly praised. REDON.

Development and Anatomy of the Nasal Accessory Sinuses in Man. By Warren B. Davis, M. D., Corinna Borden Keen Research Fellow, Jefferson Medical College, Philadelphia. Octavo of 172 pages with 57 original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.50 net.

This work is not only extremely interesting but thoroughly practical—all in all a most valuable contribution to rhinologic literature. Much of the information is absolutely new, the result of the author's research, and it supplements beautifully the other works on the subject which we already have. No division of human anatomy is, we believe, more difficult for the student to grasp than that of the accessory nasal sinuses with their complex relations and their most exasperating variations, due normally to stages of development at different ages and to abnormalities which are ever to be expected at all ages. The principal feature of the book is the excellent illustrations, all from original drawings and natural size, showing sagittal, coronal and horizontal sections in different planes. The text accompanying is brief but ample and is written in clear style. SEELYE.

The Principles of Pathologic Histology. By Frank B. Mallory, M. D., Associate Professor of Pathology, Harvard Medical School and Pathologist to the Boston City Hospital. Octavo of 677 pages, with 497 figures containing 683 illustrations, 124 in colors. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.50 net.

In this book the author has handled the subject rather differently than usual and this has proven valuable. Most of our medical text-books are but a repetition one of another, as if each were but following the general plan of some predecessor. In the present volume we have a different view of old facts and on other subjects often an entirely new portrayal. The author's aim seems to be to begin with the pathologic lesion as it presents, taking each component element composing that lesion and tracing it back to its origin and there taking cognizance of all the various causes which may have produced the change which is present in that element. It is hardly true to say that this opens up a new country to us but at least it causes us to journey by a new route to our destination, with the result that a different and often better viewpoint is attained. To the writer this seems to be the chief virtue of the book but this is so great that its study needs must be profitable. WEST.

The Junior Nurse. By Charlotte A. Brown, R. N., Instructor in the Boston City Hospital, etc. 12mo, 208 pages, illustrated. Cloth, $1.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book fills a long-felt want to the junior nurse, whose work is so new to her that she feels like a child lost in the woods for the first few months of her training. The more advanced text-books necessary to the middle and senior years appal her with their great volume. This little book puts her on a familiar basis with the terms of nursing which she must learn at once. It is concisely written and directly to the point. Many doctors are asked by young women who aspire to the profession of nursing what they have to do in the hospital, etc. The overworked physician should direct her to read this book, which should also be in every nurse's library. The author is to be given great credit for the manner in which she has covered the ground. DAVIES.

International Clinics. Vol. III, 23d Series; price $2. Philadelphia and London: J. B. Lippincott Co., 1913.

This book contains several very good papers which should be read by the profession. Especially interesting is one by Gwyn, of Philadelphia, on the treatment of pneumonia, where all modern modes of treatment are compared. It is difficult to decide that any one method is superior to the others, the number of cases and the different groups being so small. Yet the open-air treatment seems to bring about good results. In a paper on gastrointestinal toxemia Daniel criticizes very effectively Lane's idea of intestinal stasis. Craig gives a good paper on malaria and Ashford one on uncinariasis.

LEEDE.

International Clinics. Vol. I, 24th Series. Price $2. J. B. Lippincott Co., Philadelphia and London, 1914.

An able paper on nephritis by Willson gives the modern ideas of the disease and its treatment. Rest, diet, and above all prophylaxis, are the chief measures. Stress is laid on watching the kidneys during and after acute, febrile disease in order to detect the first signs of this dreaded disease. In uremia bleeding, purging and spinal puncture are most effective. Enemas by drop method of normal solution of sodium bicarbonate, of salt or both combined, often cause an increase of diuresis, moderate the headache and restlessness. Sweating, hot baths, packs and hot air are efficient as far as the elimination of water and table salt is concerned. Urea is only excreted to a very low degree by the skin.

LEEDE.

Manual of Surgery. By Alexis Thomson, Professor of Surgery, Univ. of Edinburgh, etc., and Alexander Miles, Surgeon Edinburgh Royal Infirmary. Vol. III, Operative Surgery. Second edition; 620 pages, with 255 illustrations. Price $3.50. Oxford University Press, American Branch, New York, 1913.

We reviewed the first edition of this volume a short time ago and have little to add to our favorable comments of that time. We are impressed anew, however, with its up-to-dateness and the completeness of description of surgical operations in such comparatively brief space. The Basle anatomic nomenclature has been adopted throughout, the older terms being placed in parentheses.

FORBES.

Defective Ocular Movements and Their Diagnosis. By E. and M. Landolt (Paris). Translated by Alfred Rommele, M. B., Ch.B., and Elmore W. Brewerton, F. R. C. S. Cloth, 99 pages, $2.00. Oxford University Press, American Branch, 35 West Thirty-second Street, New York, 1913.

This little book of one hundred pages contains more than it would seem possible to encompass in a monograph. It is full of meat and is a valuable addition to the library of the ophthalmologist. It is of equal value to the surgeon who is so frequently called upon to consider eye symptoms in brain lesions. The work deals only with pathology and diagnosis, particularly the latter. Presupposing a proper knowledge on anatomy, this book with the clear presentation of classified symptoms makes diagnosis much easier. It is not presented as a handbook but rather as a handy book, and such it is.

SEELYE.

The Healthy Marriage. A Medical and Psychological Guide for Housewives. By G. T. Wrench, M. D., B. S., (London), Past Assistant Master of The Rotunda Hospital, Dublin, etc., etc. Cloth, 299 pages, $1.50 net. Paul B. Hoeber, Publisher, 69 East Fifty-ninth Street, New York, 1914.

The writer is evidently a man of wide experience, ripe learning and much wisdom and the result is a little book which is not often to be had by the laiety. Wisdom and common sense are the prevailing characteristics. The writer inveighs late marriages but shows under existing conditions that the mortality of the young married men is five times that of their unmarried contemporaries. He believes almost all neurosis is due to faulty marital relations and scores the upper-class women of the United States for their silliness resulting from false sex relations and lack of child bearing.

WINSLOW.

NOTICE.

The following amendment is proposed to the constitution of the Utah State Medical Association to be voted on at its next annual meeting:

ARTICLE IX.—OFFICERS.

Sec. 2. After the word Councilors insert "and Secretary (who shall be elected for three years)."

W. BROWN EWING, Secretary.

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ORIGINAL CONTRIBUTIONS

SACROILIAC TRAUMATISMS.*

By CHAS. R. McCLURE, M. D.
PORTLAND, ORE.

Joint injuries have always been a fruitful and interesting field for surgical discussion, not so much from the standpoint of diagnosis as of treatment. The large ball and socket or hinge joints, as well as the smaller, are so accessible to inspection and palpation that a diagnosis of their traumatisms is usually a matter of comparatively little trouble. Even when it is, the modern aids to diagnosis which we happily possess make plain the kind, location and extent of the lesion present. The feature of importance is that the examination of the patient always directs the attention of the medical attendant to some particular joint as being responsible for the train of symptoms presented. Rational treatment is then instituted, inasmuch as it is directed to the offending articulation. As to whether the proper or most efficient measures are used or not is another matter.

There are some other joints, true joints in every sense of the word and as such subject to the same accidents, which have been little understood until recent years. This has been due partly to defective teaching and a consequent lack of a proper knowledge of their anatomic structure and relations, as well as to the greater difficulty in making an examination of them, and thus arriving at a diagnosis of the condition presenting. It is to two of these joints that I am directing your attention, limiting our discussion to the traumatisms to which they are subject.

The pelvic bones form the connecting link between the body proper and the lower extremities. To them are attached the principal muscles of the trunk as well as those which have control over movements of the thigh. The large innominate bones on either side are attached in front at the symphysis pubis. Behind and between the innominate bones is the sacrum which in reality is the keynote of the pelvic arch.

The sacroiliac joints on either side are large, broad and flat, well supplied with strong ligaments and protected by overlying muscles. It is only within recent years that studies upon these articulations have proven them to be true joints, being possessed of all the structures that are essential to joints, and that they have normal motion, at least in some slight degree. This motion consists in a slight tilting of the sacrum on the ilia, or

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*Read before Portland City and County Medical Society, Portland, Ore., Nov. 19, 1913.

vice versa, while the slight motion at the symphysis pubis is of a sliding up and down nature. While it is true that these motions are more marked in women, we must bear in mind the fact that mobility does exist, irrespective of age or sex.

The articulating surfaces, as I have said, being flat and nearly smooth, the axis of the joint oblique or nearly perpendicular, it follows that the stability of the joint depends upon its ligamentous and muscular attachments. Being dependent, therefore, upon the tone of soft structures, disturbances in these joints must be more frequent and the result of less violence than in other joints.

The sacroiliac joints, then, being true joints and subject to the same diseases as other joints, what are their usual injuries?

(1) Wrench or sprain; (2) True luxation; (3) Relaxation or looseness.

The wrench or sprain may be due to sitting down forcibly, being thrown in a twisted position, efforts to catch one's self in falling or an overtaxing of the back when attempting to carry too heavy a load. At such times the symptoms arise acutely and are located usually in the back. Such cases are frequently called lumbago. Pain is intense, the patient walking with difficulty and in a stooping posture or the disability may be so marked as to put him in bed. Limitation of movement in the back is marked and attempts to increase it causes an exacerbation of pain. There may be pain in the thigh or leg, and when behind it is called a traumatic sciatica. The following cases illustrate this type:

A friend of mine, a physician, was almost bent double and complained of severe pain in his back, he attributing his trouble to lumbago. Upon questioning him it was discovered that his discomfort began a couple of evenings before, when an effort was made to keep from falling when he slipped on an icy pavement. Examination revealed that he had no lumbago, but a sprain of the sacroiliac joint. Adhesive plaster strapping brought great relief and within three weeks he was well.

In another instance, a man presented himself complaining of what he called sciatica. He was a laboring man and on careful questioning it was discovered that his symptoms began rather suddenly following an attempt to lift a heavy iron beam. His pain was almost entirely down the posterior surface of the left thigh, extending even into the leg. No tenderness could be found in the course of the sciatic nerve or in other location than directly over the left sacroiliac articulation. Adhesive plaster strapping gave almost instant relief and within a few weeks he was perfectly well. Not a drop of medicine was given him.

The cases of true luxation are rare and are caused by some very severe accident, which has caused a most decided force to be borne by the lower part of the spinal column, centering directly on the sacroiliac joints. In such a case the pain is of the most severe character and the patient is completely incapacitated. The stability and integrity of one or both joints, forming as they do the keystone to the arch of the body, has been destroyed, and as a result the most extreme disability follows. All movements of the trunk and abdomen, as well as those of the thighs, are almost impossible, associated as they are with such extreme pain.

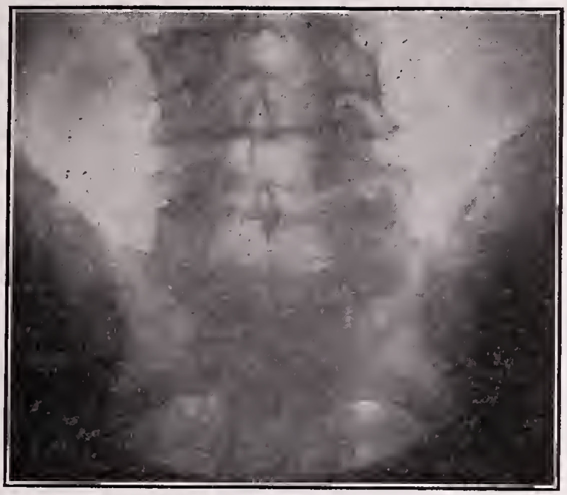
The x-ray is of great value in confirming a diagnosis, when suspected, but a negative picture does not rule it out. Radiographs of this region have not been as satisfactory to date as of most other portions of the body. Rectal examination is of great value in these cases. These joints are easily palpable per rectum and any disturbances in their continuity are readily discernible.

As illustrative of this condition I will cite a case that came under my observation in Cincinnati, O.:

About three years ago a laboring man was riding in an open summer street car, when the car suddenly jumped the track and smashed into a telephone pole. The man was thrown violently from the car, in just what position no one knows, as he was picked up unconscious and carried to his home. No fractures were received but the physical disability was so extreme that, when I first saw him some few weeks later, he could only be gotten out of bed with the assistance of much help and even then with great pain. Voluntary flexion and extension of the trunk on the hips was practically impossible. The erect position was maintained only by supporting himself with the hands placed on his thighs. All movements were painful.

The examining hands placed over the iliac crests and thumbs inserted over the sacroiliac joint disclosed a luxation. Simply making inward pressure on both crests evinced pain at the offending articulation. Rectal examination confirmed the above.

One has to see a case of this nature to appreciate fully the pitiful disability that follows such an injury. In this case the x-ray confirmed beautifully the diagnosis, being the best I have ever seen in any suspected lesion of this region. I present it for your inspection, as it illustrates conclusively that such an injury can and does occur. This man was fitted with an appliance to give him support which was fairly effective. More heroic measures were not consented to as, being a medicolegal case,



Note Sacroiliac Luxation at Right of Cut.

it was thought best to postpone until the case had been settled in the courts.

In the third variety we have the cases of relaxed or loose sacroiliac joints. These are by far the most common and, at the same time, less often recognized, inasmuch as they are less acute, but the symptoms are more lasting and often give rise to or are associated with neurasthenia, thus making them more difficult to treat.

These patients are much alike, all possessing the weak back, often associated with flat feet and relaxed knees. When sitting they are prone to assume a lounging position, often placing a pillow behind their backs. When standing they assume awkward attitudes, either drooping forward or holding their hands on their hips for support. In rising from a sitting position they assist themselves by placing their hands on the arms of the chair. Many of these symptoms simply indicate a condition of strain of these joints, but when the strain is continued the ligaments give away, allowing the bones to become misplaced or to become relaxed, producing instability of the joints and a feeling of weakness when used. With weakness of these articulations we have weakness of the muscles attached to the pelvis.

Goldthwait, who has done much to aid our knowledge of these joints both anatomically and pathologically, believes that this condition is frequently the forerunner of ptosis of the abdominal and pelvic organs. According to him, when the muscles become weakened by awkward positions and the bones are thrown out of equilibrium, then the ligaments are allowed to stretch and in this way the organs begin to sag. Once commenced, the abdominal muscles no longer give their support and the sagging continues.

The postoperative backache is explained by the loosened sacroiliac joint. Lying for an hour or two on a hard table, anesthesia being complete, the small of the back is allowed to sag, the muscles are relaxed and the sacrum is loosened between the ilia. The patient is then placed in bed on his back without any support and at times the backache is severe. The remedy is a support under the hollow of the back, both during and after operation.

Many of us can recall the backache from stooping a long time over a low operating table. In fact any long continued position of sitting, standing, stooping or lying produces an increased strain on muscles, followed by a strain on ligaments, and when the back is the part involved we have a relaxation of the sacroiliac joints.

Normally during pregnancy and parturition we have a relaxation of these joints and it sometimes persists afterward, giving rise to a degree of suffering which is at times severe.

The diagnosis of sacroiliac injury is founded on the following observations:

Inspection of the back will often reveal a diminution of the anterior curve of the lumbar spine and a prominence of the upper end of the sacrum; with this is a more or less flatness of the buttocks.

Pain is invariably a prominent symptom, either at the joint or in the region of the joint; when above on one or the other side it simulates a lumbago, but it is more frequently found down in the legs. The sacral plexus of nerves, with some of the branches from the lumbar plexus, cross just in front of these joints, so that any injury tending to tilt the lower part of the sacrum forward would cause the anterior ligament to press on these nerves, producing an irritation of some special branch or the entire trunk with pain reflected along its course. It is a good thing to remember that the pain will be referred to the distribution of the nerve and not to the seat of the injury. Pressure directly over the nerve trunks failing to elicit local pain, and movements of the joint increasing the pain in the legs and also at the joints would rule out a neuritis.

Rectal examination will frequently disclose a tender spot on either or both joints. In case of a luxation, the finger will notice the step-off from the displaced to the other bone, not feeling a smooth surface such as is found in the normal joint.

Limitation of motion, associated with pain, is the most important sign we possess. Have the patient stand erect, hold legs stiff and then bend forward at the waist. No pain will be elicited until motion takes place at these joints. Now with the patient sitting down, in which position the hamstring muscles are relieved, the forward bending of the body is painless, because when the spinal motion is complete the hip joint allows a continuance of the forward movement of the body. This also rules out a lumbago, since the lumbar muscles are not stiff and are freely movable.

Place the patient on his back and flex the extended leg on the abdomen. In a healthy person the leg can be brought beyond a right angle and not cause pain. If the person has a relaxed or strained sacroiliac joint, the leg cannot be brought to a right angle without causing pain at the joint region or along the sciatic nerve. In the same case, with the leg flexed on the thigh, the leg can be flexed well on to the abdomen without causing pain.

In the relaxed cases there is some perceptible motion at these joints. Place the hands over the iliac crests with thumbs centered on the sacrum and, when pressure and an up and down motion are made on the ilia, then often perceptible movement is revealed.

Differentiation from sciatica is made by absence of pain on pressure along the sciatic nerve; from lumbago by the absence of pain on pressure over these muscles and free motion of these muscles. In both are present also the signs of a sacroiliac injury. Sciatica and lumbago have been such common diagnoses in the past, the unfortunate individuals being subjected to much unnecessary drugging and suffering, that it behooves all of us to familiarize ourselves with these conditions, so that we may the more efficiently render service to those coming under our care.

In making prognosis of a sacroiliac relaxation or injury several factors must be considered. The acute sprains, when not too severe, respond promptly to treatment and are quickly relieved. The chronic relaxed cases are the most resistant to treatment, and in many cases some kind of support must be worn for an indefinite period of time. The severe sprains and subluxations, when properly looked after, will be restored to the normal, but when neglected or improperly treated they become chronic. The length of time it will take to bring about a cure depends on the temperament of the injured patient, the treatment and in some cases the outcome of a pending damage suit.

What, then, is the treatment of these conditions? It consists essentially in the protection of the joints, but the treatment in any individual case depends on the extent of the lesion present.

In the mild cases of relaxed sacroiliac joints, the joint protection is secured by improving the muscular tone of the body, especially the back, abdominal and thigh muscles, and by advising the erect posture in standing and sitting, at the same time discouraging drooping and lounging. Placing a pillow in the hollow of the back, when sitting or in bed on the back, is a simple and real support. Massage and well directed exercises, stimulating baths and electricity in such cases improve muscle tone and give material aid to the proper support of a relaxed joint. If associated with flat feet or relaxed knees, they should receive the proper treatment for those conditions.

In the more severe cases the above methods, while used, are not sufficient to effect relief. Then some retention apparatus is needed and the simplest is adhesive plaster. While applying the adhesive straps the patient should lie on his abdomen, a slight hammock effect being desirable. The straps should reach from the upper thigh or trochanter on one side to the lower ribs on the other, crossing the sacrum diagonally from left to right and then right to left, or *vice versa,* until several straps have been applied. These straps are then reenforced by straps of the same width, which cross the pelvis transversely, extending from the anterior part of the ilium on one side to the corresponding point on the other. These straps are carried up and down, overlapping each other until all of the lower lumbar spine and buttocks are covered. Frequently it is wise to place a pad of felt under the plaster, so that pressure may be made upon the sacrum. When properly applied this plaster dressing can be worn for several days or weeks, giving decided relief.

When, for any reason, the adhesive straps are not well borne, do not give sufficient support, or after wearing a change is desired, then a good support can be made of elastic webbing. For the male take two strips about four inches wide and long enough to reach around the pelvis and meet in front, overlapping in front but spread out behind, but overlapping some all around. After the strips have been securely stitched in front and buckles and straps applied to secure and hold the band, the remainder is held, as well as reenforced, by feather-bone stitched to the outside of the band. Particular care must be taken to see that the band secures the trochanters. Such can be made more efficient by attaching a firm pad in the back, so as to make pressure on the sacrum. In the female this same elastic webbing is added to the base of the corset and tightly drawn with the corset around the pelvis.

In the more severe cases some mechanical brace is necessary. This should be devised so as to hold the pelvis, grasp the trochanters and make some pressure on the sacrum. It should then be extended up on the chest and back like any ordinary spinal support.

As in a good many other conditions, the plaster of Paris jacket is one of the best devices we possess to give protection and support to these joints. Whether applied in the hammock or on the frame it is to be remembered that the jacket must extend low enough to get a good hold on the trochanters. Usually the best position in which to apply the jacket is with the patient standing, with arms raised shoulder high and grasping some support.

In the cases of sprained or wrenched sacroiliac joints, especially when at all severe, rest on the back on a firm mattress, with a firm pillow beneath the hollow of the lumbar spine, for a few days to a week, is very effective in giving a desirable result. During this time the patient can once or twice a day be turned over, given massage and hot applications. Within a short time either the adhesive straps or an elastic band is applied and the patient allowed to be up and about. Exercises, if slowly and gradually increased, are now of benefit. The treatment of this class of cases is much the same as that of a sprained ankle. Keep them on the move and a cure will much sooner be realized.

The injection of iodin tincture into these joints may be tried to set up inflammatory reactions with productions of adhesions.

In those very severe cases of sprain in which there is some displacement of the bones, or in cases of true subluxation, the bones must, if possible, be brought into proper relation with each other. This is not always easily accomplished. Manipulation is the first method to be tried. With the patient on his back and leg extended on the thigh, by flexing the thigh onto the abdomen the ilium may be carried back to meet the sacrum; or, with the patient on his abdomen, the thigh is adducted and extended, the ilium being pushed forward to meet the sacrum. An anesthetic is usually required during these manipulations. Another method is to place the patient face downward upon two tables, so separated that the pelvis will sag between them, allowing the weight of the body to pull the ilia down. Another is to place the patient on a Goldthwait frame which is used for the application of plaster of Paris jackets in tuberculosis of the spine. The rods should be bent with a sharp curve low down, the convexity applied to the sacrum, and the weight of the body allowed to push the sacrum forward. The relief is often sudden and marked as the bones slip into place. With correct apposition of the bones and while in this position, a plaster of Paris jacket should be applied and worn for several weeks, this to be followed by elastic bands to be worn much longer.

In a certain percentage of these severe, especially luxated cases, failure will be the result of all our efforts with the above methods. Then we may and must resort to operative procedures, cutting down and exposing the joint, and doing an arthrodesis. Thus we bring about an ankylosis of the joint, all pathologic symptoms being relieved and without any interference with normal function.

In conclusion, I wish to repeat and emphasize the statement that these are true joints, subject to the same traumatisms as other joints, and that measures properly instituted for their restoration to the normal will result just as beneficently as in the case of any other joint.

FRACTURES OF THE PELVIS WITH REPORT OF CASES.*

By C. G. Sabin, M. D.
PORTLAND, ORE.

It is notable that standard works on surgery and the treatment of fractures have very little space devoted to the subject of fractures of the pelvis. This is probably due to the relative infrequence of the lesion, to the usual insignificant displacement of the bony fragments, to the moderate deformity and disability resulting from the fracture *per se,* and to the limited possibilities of corrective treatment. However, when one considers the high immediate mortality of the lesion, the occasional malposition of the united fragments and the very frequent complications of serious injuries of the adjacent soft parts, it would seem that the subject is worthy of more extensive consideration. The present paper constitutes a review of the available authorities on the subject, together with some personal observations on a recent series of several cases.

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*Read before Portland City and County Medical Society, Portland, Ore., April 15, 1914.

Architecturally, the bony pelvis is a remarkable combination of arches and counterarches, so arranged as to give great strength both perpendicularly and laterally and yet with the component elements so united that the structure as a whole presents a slight but definite degree of flexibility. Henry Morris, in "The Anatomy of the Joints of Man," describes two principal series of arches. One, the femerosacral, extends from the acetabula on the sides to the sacrum, which acts as the keystone. Through this arch the weight of the body is transferred to the heads of the femora. To prevent the bases of this arch from separating they are connected through a secondary arch composed of the rami and the bodies of the pubic bones. The second series, the ischiosacral, transmits the body-weight to the tuberischia and the bases are in this case supported by a secondary arch composed of the rami of the ischia and the rami and body of the pubis. In addition, the pelvis presents a series of arches laterally and antero-posteriorly to resist application of force in either of those directions. It may be added that the ligamentous supports of the pelvis are of great strength and so placed as to materially increase its resistance to the application of stress or strain.

The above briefly outlined facts may in part explain the relative infrequence of fractures of the pelvic girdle. In such accidents, as falls from a height, though superficial contusions may show that the region of the pelvis received the brunt of the applied force, yet statistics show that fracture of the pelvic girdle is much less frequent than those of the shoulder girdle, the extremities, ribs or the skull. Bruns estimates that fractures of the pelvic bones, constitute only about 0.3 per cent. of all fractures. In Stimson's statistics, out of 6,904 fractures treated at the Hudson Street Hospital and Dispensary between 1894-1899, only 29 were of the pelvis. It is probable, however, that if the reports included slight fractures of the crests and spines of the ilia, the general average would be increased. It is also possible that some pelvic fractures are undiagnosed. I shall mention later one such severe fracture only discovered at postmortem.

The bones of the pelvis, as before indicated, will give way only upon the application of great force, and in practically all cases this force must be directly applied. The direction of the application, however, may be varied. It may be transmitted through the ischium by falls in a sitting posture; through the acetabulum via the femoral head in falls upon the feet or knees.

The violence may be applied in any direction or several directions upon the sides, back or front of the pelvis, in such events as cave-ins of ditches, crushing accidents with rock or timbers, as in mines, between car bumpers, between the side of a boat and the dock or a car and platform and, depending upon the degree of violence, producing an infinite variety of combinations of fractures, extent of displacement and complicating injury to the soft parts.

The diagnosis of fractures of the pelvis in general presents no great difficulty. The excessive violence necessary for its production, however, frequently causes other injuries of so severe a nature that the pelvic damage is overlooked. Then, too, fractures of the wings of the ilia or single breaks through a ramus of the pubis, producing no displacement and masked by swelling and hemorrhagic infiltration, may prevent the diagnosis.

In fractures of the crest or of a single pubic ramus the patient may be able to walk about unassisted. Crepitus may be very slight or absent, but in most of my cases was marked and easy to elicit.

The history of the accident practically always indicates an extreme degree of violence and the patient is thus usually first seen in a corresponding state of shock. Especially is this true when the lesion is accompanied with injuries to surrounding organs. The diagnosis should be established with as little manipulation of the parts as may be. Points of fixed pain or tenderness should be sought for by palpation. Crepitus and abnormal mobility may be often demonstrated by firm pressure inward on the iliac crest or by alternate up and down motion of the same. Passive flexion and extension of the thighs is often accompanied by but little pain, but pushing or pulling in the long axis of the thigh may furnish definite data as to painful points or crepitus. Examination per vaginum or rectum may be of assistance.

Some conditions, such as a fracture of the floor of the acetabulum without displacement, may be impossible to diagnose. In fracture of the edge of the acetabulum with posterior dislocation of the head of the femur a differential diagnosis must be made from fracture of the neck of the femur. In the latter case the leg is extended and rotated outward; in posterior dislocation the leg is flexed and rotated inward. The ultimate diagnosis of location and extent of the fracture depends of course upon the x-ray, though it may be said of radiographs of the pelvis that they are often extremely difficult to interpret.

In general, fractures of the pelvis are classed as (1) those which break the continuity of the pelvic ring, and (2) those which involve individual bones without disturbing the contour of the ring. The ring may be ruptured by a force applied from front or back, or from side to side, but the point of breaking is practically always in front or back. One of the commonest forms is from a force from front to back, in which a central portion of the pubis with more or less of the bone on either side is driven backward into the pelvis. A continuance of this force may fracture posteriorly between the sacrum and the ilium on one or both sides. This break may follow the synchondrosis (very rare) or through the ilium or through the sacrum itself. This breach of the pelvic ring, front and back, in two or more places, known as the "double vertical fracture of Malgaigne," is one of the most severe forms of pelvic lesion.

Of the individual bones, fractures of the crests or spines of the ilia are the most common, and also of the least moment. Breaks of the tuber-ischia alone have been diagnosed but, according to Cotton, in every case where a radiograph was taken concomitant lesions of other bones was shown. The sacrum is rarely fractured except in cases of complete crush of the girdle, and the coccyx, due to its mobility, is seldom injured except in passage of the fetal head.

The most serious aspect of pelvic fractures is that of the injury to neighboring organs, bladder, urethra, rectum and pelvic vessels and nerves, which are so often a complication. It is sometimes difficult to understand the severe injury to the surrounding organs in view of the slight displacement of the fragments, but it is probable that at the instant of the accident the displacement was much greater and that the elasticity of the tissues have brought about a partial reduction.

In the diagram the close relation of the bladder and urethra to the pubis may be noticed, and it is against the edge of the pubic body and rami or their fragments that direct laceration of these organs is produced. I believe that ruptures of a full bladder may occur at a point away from bony contact simply from the bursting force developed by a blow at some other point. I will mention one such case.

By far the most common complication is injury of the urethra. It occurs in the membranous portion and may vary from a contusion to a complete separation of the canal with lacerations involving the prostatic portion and the base of the bladder. In such an event urinary infiltration, unless relieved by drainage, follows the fascial planes from the perineum and here, as in the space of Retzius with rupture of the bladder, secondary suppuration is very apt to occur.

Rupture of the bladder occurs also with anterior fractures of the pelvic girdle. The rupture may be near the base and drain downward, extraperitoneally into the space of Retzius with urinary infiltration and hemorrhage into the abdominal wall, or intraperitoneally, allowing the escape of urine and blood into the peritoneal cavity. With the latter condition shock is often profound and in combating the general symptoms the serious local injury is apt to be overlooked.

The sharp ends of fragments may tear the iliac veins or the external iliac artery. In such an event the result is rapidly fatal. Even when it is some of the lesser pelvic vessels that are involved, hemorrhage may be a marked and dangerous factor in the case.

Injuries to the rectum and other pelvic viscera are less common but do occur. I have seen two cases of rectal injury, both fatal.

Traumatic lesions of the nerves are rare and are usually associated with fractures of the posterior part of the pelvic ring.

The direct prognosis of fractures of the pelvis is hard to determine, as the degree of violence necessary for the production of such an injury is generally associated with other and such serious lesions that the pelvic injury is overlooked in estimating the final outcome.

Hence, statistics are scarce and unreliable. I think, however, it may be safely stated that in accidents resulting in severe fracture of the pelvis, with involvement of the adjacent organs, the immediate mortality is extremely high, probably in the neighborhood of 50 per cent. Indeed, the immediate prognosis is that of the associated lesions rather than that of the fracture.

If the patient does not die at once of shock, and the injuries of bladder, urethra and rectum receive prompt and efficient surgical treatment, the outlook is much improved. As far as the fractures themselves are concerned, the outcome in the majority of cases is both anatomically and functionally surprisingly good. In the uncomplicated and simpler forms of fracture healing is usually prompt and deformity slight. In cases that recover the period of disability is perhaps on the average less than that of fractures of the femur.

In regards to treatment of pelvic fractures, the literature is remarkable for its extreme brevity. The subject is summed up in Bryant and Buck with the the statement that it requires "the exercise of common sense, aided by a practical knowledge of bone repair and a reasonable amount of mechanical ingenuity in securing immobilization." The manual reposition of fragments is practically impossible and usually unnecessary. The fragments, except in the extreme crushes, tend to fall naturally into position.

In the simpler forms, as in fractures of the crest of the ilia, practically all that is necessary is rest in bed for three or four weeks. In fractures involving the continuity of the pelvic ring all writers on the subject recommend the application of a firm bandage or laced swathe about the pelvis. I wonder if any of those writers ever made actual use of such a contrivance. We all know that a binder about the pelvis to retain its position must be very tight and firm indeed; and the application of such a swathe in a serious pelvic fracture is always provocative of the most intense pain. In one of my cases it could be actually demonstrated by palpation that the pain was due to an overriding of the fragments. The pain ceased and the bones assumed a more nearly normal position when the swathe was loosened. In the double vertical pelvic fractures there is sometimes a definite upward displacement of one side of the ring which can be remedied only by extension upon the leg of the "high" side.

I have found that by far the best method of dealing with the more extensive forms of fracture is to place the patient upon a Bradford frame, secured to the head and foot of the bed in such a way that the sag of the canvas is just above the surface of the mattress. The canvas of the frame should not be too tightly stretched, so that the trough formed by the weight of the body will make a slight side to side pressure upon the pelvis. Extension may be added if necessary and counter-extension may be secured by placing the head of the frame at a lower level than the foot. No movement of the pelvis is necessary in using the bed-pan or in otherwise caring for the patient.

Rupture of the bladder and urethra are such common complications in pelvic injuries that a word may be said of their treatment in this connection. When a severe traumatism about the pelvis is first seen, every effort should be made to determine what, if any, injury of the urinary tract exists. A discussion of the technic of such an examination is out of place here. However, I will mention only for severest condemnation the method advised by some authors of filling the bladder with water to determine the presence of intraperitoneal rupture of the bladder. If any of the above complications are found, they should be promptly dealt with by exploration, repair, drainage or other surgical procedures applicable to the conditions discovered.

I will briefly report several cases which have come under my observation and which will serve to illustrate the methods of production, the variety of the lesions and complications, a rational treatment and the character of the afterresults.

Case 1. This came under my care during my hospital service. Man, age about 30, severely crushed and contused about chest, abdomen and thighs, while unloading car of lumber. Entered hospital unconscious and in extreme shock. One arm and several ribs were fractured, blood was withdrawn by catheter from the bladder, and considerable blood was expelled from the rectum. No fracture of the pelvis was demonstrated on hurried palpation. No treatment was given except that for shock and patient died in a few hours.

Postmortem showed that the head of the femur had been driven completely through the acetabulum into the pelvis, fracturing the rami of the pubis and the ischium. The bones were so jammed that there was no crepitus but the thigh could still be flexed upon the pelvis. The bladder was ruptured, the rectum was torn and the pelvis and lower abdomen were full of blood.

Case 2. Mr. G., laborer, Oct., 1911. Thrown from load of wood against street curb. Taken to St. Vincent's Hospital. Had numerous minor contusions. Had compound comminuted fracture of right iliac crest. Several small fragments were removed but no attempt at reposition or retention of the larger fragments was attempted. Bone healing was slow and pain persisted for several months. In such a case I would now use nails or brads to secure the fragments.

Case 3. Mr. S., laborer, age about 30, July 30, 1912. Log rolled upon him crushing his chest and coming to rest across his pelvis, where it remained for over an hour until jacks could be brought from camp. Entered St. Vincent's Hospital after a long, hard trip in an extreme state of shock. The right chest was practically crushed in. There was evidence of extreme traumatism about the pelvis. With a hand upon each iliac crest the two halves of the pelvic ring could be easily moved upon each other and crepitus was marked. There had been no passage of urine but blood was oozing from the meatus and also from the rectum. A soft rubber catheter was passed apparently into the bladder and a quantity of blood was withdrawn followed by almost clear urine. It was later found that the catheter was not in the bladder, but in a large space torn in the tissues at the base of the bladder, and into which the bladder drained. This catheter was left in place and continued to drain.

The patient was in such extremely bad condition that nothing beyond drainage of the urine and treatment of the general condition was attempted for a week, when a large perineal abscess had developed. A nitrous oxide anesthetic was given, the abscess opened and a large rubber tube introduced into the bladder. The patient was then placed on a Bradford frame, where he remained during a stormy recovery. A secondary operation was later done for repair of the urethra.

Case 4. Mr. C., laborer, aged 20, entered St. Vincent's Hospital April, 1913. Was caught between side of moving car and station platform. No injuries except about pelvis. Suffering severe pain and moderately shocked. Two sides of pelvis freely movable upon each other; crepitus marked. No rigidity of abdomen. Small quantity of blood and urine withdrawn by catheter. In a few hours conditions became much worse and abdomen developed rigidity.

A median abdominal incision above the pubes. Considerable extraperitoneal infiltration of urine was found in the abdominal wall. The source of this urine was a rent in the anterior aspect of the bladder low down behind the pubes. As there appeared to be also some intraabdominal trouble the peritoneum was opened. Considerable urine and blood were found free in the pelvis and lower abdomen. This came from a small rupture on the posterior aspect of the bladder which was immediately closed with a purse-string suture. The abdomen was cleansed and the peritoneum closed without drainage. A drain was left in the space of Retzius which was removed in a few days. The perineum was opened, disclosing a complete rupture of the urethra. A large drainage tube was placed in the bladder. The fracture was a complete double vertical type.

A tight pelvic swathe was applied but pain was intense and only relieved on loosening the swathe. It could be demonstrated by palpation that the swathe caused an overriding of the fragments of the ramus of the pubis. The patient was then placed on a Bradford frame, where he remained in much more comfort during recovery.

Case 5. Mr. O., age about 20, entered St. Vincent's Hospital April, 1913. Struck across hips by rolling log. Suffering very little pain and no shock. Careful examination showed no false mobility of the pelvis. No crepitation, and no very painful points. Catheterization brought some blood, followed by clear urine, but it was evident that the catheter did not enter the bladder and the bladder remained distended. It was later found that pressure directly on the pubis produced slight crepitus.

Perineal section was done and the urethra was found to be completely torn in two. It was partially united and a drainage tube placed in the bladder. Patient was placed on a hard bed with sand bags to the sides of the pelvis and made a rapid and perfect recovery.

Case 6. Mrs. G., cook in lumber camp, entered St. Vincent's Hospital June, 1913. Was on runaway hand-car which collided with freight-car. Her pelvis was caught between a trunk which was on the hand-car and the side of the freight-car. She was about four months pregnant. Suffering great pain but little shock. Great mobility of sides of pelvis and marked crepitus. Left side of pelvis persistently higher than right.

She was placed on a Bradford frame with the head lower than the foot and extension put on the left leg. One week after the accident miscarriage occurred. There was no injury to the bladder or other pelvic viscera, which is strange considering the extent of the lesion of the bones, which was a double vertical fracture.

Case 7. Mr. S., laborer, struck on side of pelvis by piece of timber thrown by cable. Entered St. Vincent's Hospital August, 1913. Large contusion of right hip and thigh. X-ray showed little except some slight fragmentation at crest of ilium, but it could be distinctly made out on manipulation that there was a vertical split of the ilium and the two fragments could be moved upon each other. Rest in bed for three weeks brought complete recovery.

Case 8. Mr. S., laborer, aged 40. Entered St. Vincent's Hospital September, 1913. Was in some logging accident, the history of which I never learned definitely. Was unconscious and in extremis. Pelvis was a mass of crushed fragments. Blood coming from rectum and withdrawn by catheter. Abdomen rigid and distended. Patient died in a few hours. Necropsy not obtained. I believe the direct cause of death was hemorrhage from torn pelvic vessels.

A USEFUL SPLINT FOR FRACTURE OF THE UPPER END OF THE HUMERUS.

By Harold B. Thompson, M. D.

SEATTLE, WASH.

The accompanying photographs and diagrammatic sketch illustrates a figure 4 splint which I have used with great success in several cases of fracture of the humerus very near the shoulder. The splint is not original with me, being illustrated and described by Scudder and accredited to the clinic of V. Hacker, although I had not noticed this description until after I had made and used the splint several times. In my experience I do not recall having seen it used by other physicians and feel it is simply because its great adaptability to certain fractures has not been called to their attention.

In most fractures near the upper end of the humerus the distal end of the small upper fragment is pulled outward and forward by the action of the muscles attached to the greater tuberosity, and on account of the small size of the fragment it is very difficult and practically impossible to manipulate. It is necessary, then, to abduct the arm and carry the elbow forward in order that the shaft approximates the direction of the upper fragment.

The splint described gives this abduction admirably and also tends to produce some extension which helps to keep the fragments in position. The angle of abduction as well as the angle of the arm forward or back of a vertical plane of the body can be varied to the necessity of each case as disclosed by stereoscopic radiographs.

In making the splint one is surprised how short the sides of the right angled triangle need to be, the hypothenuse or longest side varying from two inches in a very small child to about five inches for an adult. The other sides are even shorter than this, their exact measurements being determined by the amount of abduction required. It is better to make the splint too small and then fill in the axilla and elbow with cotton to obtain just enough traction.

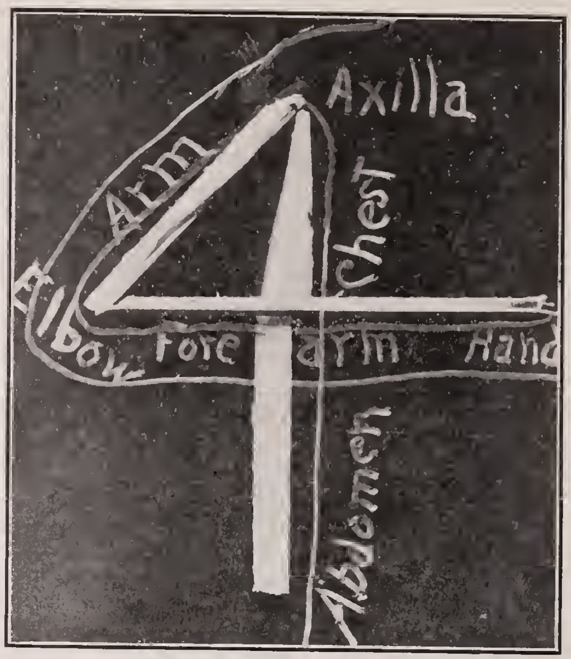

Fig. 1.

The splint is held in position by adhesive strips half way around the body at the level of the nipple and umbilicus, and also around the arm and forearm. The whole is then immobilized by a bandage through the figure 4 splint and around the arm and forearm, and then around the entire body. Fig. 1.

The accompanying radiographs illustrate very well the particular type of fracture in which this splint is useful.

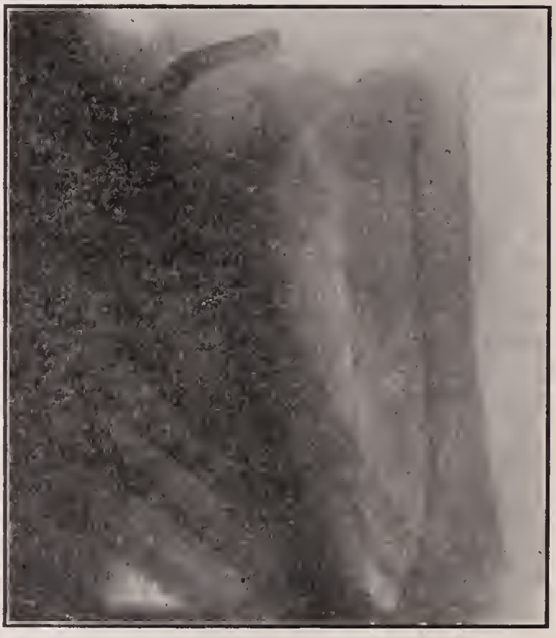

Fig. 2.

Fig. 2 was taken after a supposed reduction under general anesthesia. The operator probably felt the upper end of the lower fragment and mistook it for the head. After a few days' counterextension and about one week after the injury another anesthetic was given, reduction made and the splint applied with the result shown in Fig. 3.

This case also illustrates well the extreme importance of the x-ray in fracture work. The first picture shows the uselessness of any attempt at reduction without markedly abducting the arm, as it shows the upper fragment rotated outward and so small that manipulation was impossible.

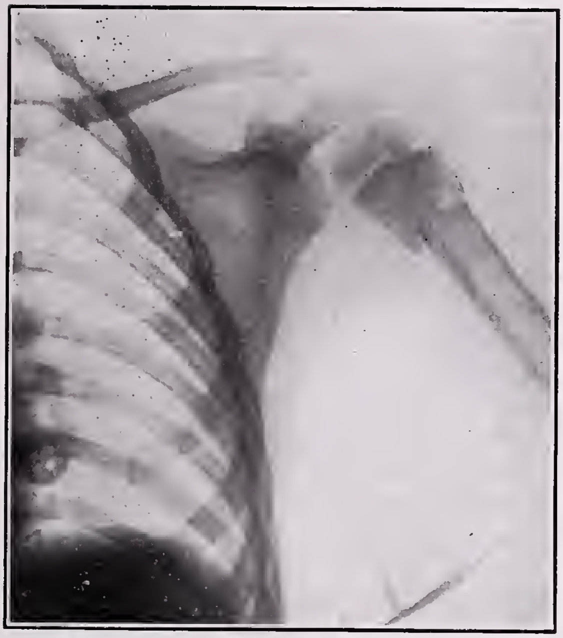

Fig. 3.

The diagnosis of fracture without the x-ray was easily made but the stereoscopic negatives indicated clearly the best line of procedure in making reduction. The second plate assures the physician that proper reduction has been obtained and that his immobilizing appliance is maintaining the reduction.

Surely the exhibition and explanation of such plates to the family make them appreciative of the results and their exhibition before a jury would absolutely bar any action for malpractice. The physician who uses the x-ray both before and after reduction of fractures gains much in the confidence and respect of the patient and insures himself against malpractice suits, all of which is at the expense of the patient and redounds to the benefit of both him and the physician.

A FEW CONCLUSIONS REACHED AFTER TWENTY YEARS OBSTETRIC PRACTICE COVERING 2,108 CASES WITHOUT MATERNAL MORTALITY.*

By Edward I. Rich, M. D.
OGDEN, UTAH.

The meaning intended in the above title is that no obstetric case attended by me from start to finish has died. The obstetrician, above all men, is called at night, at irregular and inconvenient hours, at times when he must break professional and social appointments, sometimes to wait for hours to allay the fears and anxiety of nervous and suffering women. But the man who agrees to attend a woman in childbirth has no right to lightly disregard that agreement. One should either refuse the engagement or keep his promise when he is needed. The only safe rule I know is to go when the people on the job insist they need the doctor. We have all assured people that we would not be needed for hours and have found the child born and the mother damaged before we got there. This is unsatisfactory to the patient and embarrassing to the doctor.

A true physician who enters a house and finds suffering, anxiety and distress therein, and who leaves in this household a few hours later a happy mother and a new-born babe, finds more real pleasure and satisfaction in his work than can possibly be gotten from any social function. His work must be done without murmur and above all things pleasantly and agreeably. He sees patients under most trying conditions and must duly consider those things if he would succeed. Above all the obstetrician shuld be a person *clean* in every respect, one who talks little about his cases and that little to himself alone.

These trying cases generally show great appreciation and, as a rule, are the means of securing to the doctor the balance of the medical practice in the family. It is an old adage that "The man who does the obstetric practice in a family does all the family practice," and he deserves it.

Preliminary Care and Treatment. The obstetrician's duty to his patient begins when he is engaged to attend the case and ends when his patient is safely delivered and restored to health. I am of the opinion that we are all too careless about our preliminary care of these cases. Pelvimetry, in primiparae especially, is of great importance but almost wholly neglected. Many cases never have the urine examined and many lives are sacrificed as a result. Many cases with bad hearts and kidneys are neglected, with disastrous results. Nipples are neglected, with untold trouble to mother and child. We pay altogether too little attention to the room, bed and surroundings of the patient. If patients are instructed how to sterilize napkins, etc., these things will be ready without expense to the family and will be a great help to the physician.

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*Read before the Nineteenth Annual Meeting of Utah State Medical Association, Salt Lake City, Utah, Sept. 23-24, 1913.

Cleanliness. The same principles of cleanliness should be observed in obstetric work as is followed in all other surgical work. A woman acquires an immunity to germs that she is in daily contact with, and the normal acid secretions of the vagina of a pregnant woman effectually destroy all pathologic organisms in the birth canal within a short time, so that she is comparatively safe, so far as she is concerned, from infection in and of herself. We have all been surprised at the infrequency or infection in cases of complete laceration of the perineum. Nature has blessed these tissues with great resistance against infection.

I am of the opinion that the man who shaves the external genitals and scrubs and paints them with alcohol and iodine will have no better results than the man who does not, providing other things are equal, and he will certainly be less in demand. My opinion is that more harm comes from scrubbing filth from the skin into the vagina and from dirty bath water entering the vagina than can possibly come from avoiding the tub bath and external scrubbing at the time of delivery. A sponge bath is proper but never a tub bath when labor is at hand, and the external genitals are best let alone, if reasonably clean, until the head distends the perineum, when hot applications of bichloride or lysol solutions will do all that is necessary.

My rule is to make but one vaginal examination, unless labor be greatly prolonged. This is done with a clean hand, encased in a boiled rubber glove, with the patient lying on her left side. The right labium is gently drawn upward with the left forefinger, so that the examining finger may enter the vagina without coming in contact with the external genitals to any great extent. One finger is sufficient and much less painful than two.

Rubber gloves are a great blessing to child-bearing women. Many years ago a famous obstetrician was asked to what he attributed his success. He answered by pointing to his short, clean finger nails. Some physicians can open abscesses and treat septic cases and yet keep their hands and themselves clean, while others, less careful, are unfit for clean work when treating such cases.

After a woman is properly delivered, the whole after-treatment is a matter of perfect cleanliness. The instructions I give to nurses in obstetric cases are "to keep the baby warm and the mother clean."

I use constantly a small wet bichloride napkin next to the woman over the vulva, over this a large sterile pad the first five days, and after that plain dry sterile napkins. I leave bichloride tablets, always marking them "poison," and instructing the nurse that one will kill the whole family if eaten, and order the patient to be bathed with one to 3,000 bichloride solution around the birth canal three times a day, or after the bowels move while she is in bed, and twice daily after she is up. The bowels are moved on the third day and every day thereafter. No restriction is made as to diet except, if the breasts are full and painful, the liquid is cut down.

The woman gets on her knees to urinate, so that any blood in the vagina will drop out. She is allowed to sit up in bed early and is encouraged to lie on one or the other side while in bed, rather than on her back, to prevent retrodisplacement of the uterus.

No douche is given under any circumstances and, if there by a syringe in the house, it is ordered locked up and the key lost. I have given only four patients that I have delivered myself a douche in ten years and have not had a case of sepsis in that time. While an intelligent nurse may not do great harm with a syringe, an ignorant one may kill the patient. The sooner we can impress upon the public that "washing out," as they call it, is a most dangerous thing, the better it will be for womankind. Kelly pads, bed pans, syringes, etc., are all sources of danger. I use paper instead of a Kelly pad, with great satisfaction and no expense. Many of my cases have been nursed by practical women, as all patients cannot afford a trained nurse.

Women and their husbands should be instructed that it takes six weeks for her generative organs to return to a normal condition after child birth and that she should stay in bed until all red flow has stopped. One woman may be better able to get up in four days than another in two weeks. No woman should return to her husband's bed for at least six weeks, and many for a much longer time. We are all careless in giving these instructions to our patients and many women suffer greatly in consequence. I have seen a case of infection following sexual intercourse ten days after childbirth and I have no doubt this would explain some cases of late infection of seemingly obscure origin.

All lacerations should be repaired at once. I have had but one complete laceration of the perineum in my practice and that was in a very slow primipara, in whom forceps were not used.

Every child's eyes should be washed out with boric acid solution and I use in every case a 1 per cent. nitrate of silver solution following it. I have had two babies develop gonorrheal eyes—one eye in each case. A safe thing is to be suspicious and treat the eyes in every case.

Patience. Next to cleanliness comes patience as an important factor in safe obstetric work. A cross, impatient obstetrician is one of the mistakes and time generally soon eliminates him. Until the uterus is fully dilated and for some time afterwards, one must wait and encourage the patient.

A dose of morphin is frequently the proper thing in the early stage of labor, when suffering is great and the os uteri is thick and resisting. I am satisfied much damage is done in country work, especially when the doctor is far from home and anxious to get back, by hurrying cases and by the too early application of forceps. In such cases, if the patient were given time and possibly a dose of morphin and the doctor put to bed, much less damage would be done. It is better practice to charge for additional visits than to injure the mother and child by haste.

If, however, dilatation has been completed for two hours and pains have been severe and progress is little or nothing, and the woman's heart is getting faster and the baby shows signs of weakness, it is generally good practice to apply forceps and bring the head down, so that the perineum is considerably distended, and then remove them.

If in the course of labor it becomes advisable to apply forceps, I do not consider it necessary to call the family together and hold a consultation or to worry the patient about the matter. My practice is to quietly boil my forceps, give the patient a little more chloroform, turn her across the bed and deliver her as carefully and gently as possible. She need not know that forceps were applied for days afterwards. Properly applied forceps should not slip off and land the doctor across the room.

The obstetrician who applies forceps because of a greater fee is dishonest and a bad man from any standpoint. When to apply forceps is something learned by experience, but it is safe to say that the young man will apply them much more frequently than his older brother.

I have had no case where Cesarean section seemed necessary; and have had professional help in delivering but three women of the 2,108 cases reported. One of these was a forceps case, the other two placenta previa.

Too much chloroform, in my opinion, is responsible for the death of many children and more injurious to the mother than most of us realize. I give chloroform in nearly every case but only when the head is on the perineum, unless suffering is very intense. When the head is on the perineum the patient's suffering can be relieved and she can be controlled and protected much better if she be given chloroform and, if piles have been troublesome and have become swollen and distended, if the sphincter ani be dilated as soon as the child is born and before the mother has recovered from the anesthetic, much suffering will be avoided. I have done this many times with most happy results.

After-Pains. If the uterus properly contracts and there are no blood clots within it, after-pains seldom are bad. Giving morphin for after-pains is, in my opinion, entirely unjustifiable. Assafetida or chloral is better. I know of three cases where morphin tablets were left for after-pains and bichloride tablets for bathing. In each case a mistake was made and the bichloride tablets taken internally, with the result that one woman died and the other two were saved only by the prompt action of the doctor.

Pituitary extract, in my opinion, is a most valuable remedy to stimulate uterine contractions when a stimulant is indicated but, when used simply to hurry things for the convenience of the doctor when progress is being made, is not justifiable. I am satisfied much harm will result from its misuse. All will admit that a slow, easy labor is safer and better for mother and child than a short, violent one. I am of the opinion that the fewer drugs we use in a physiologic process like labor the better.

Many cases of heart and kidney disease should be delivered early at seven or eight months or earlier. The mother's life is of first importance, and why let her take chances of dying after her child has reached viability? We too often temporize, wait and lose both mother and child.

Serious hemorrhage is seldom encountered unless the labor has been unduly protracted, the uterine muscle exhausted, the cervix badly torn, or the placenta has become only partially detached. In the latter case, if the placenta cannot be easily delivered by expression, it should be quickly removed by the gloved hand before the patient has lost too much blood. If pieces of membrane tear off from the placenta they are best left alone. They will be less liable to do harm than intrauterine manipulation to remove them. If the cervix has been torn badly, fatal hemorrhage may result if it is not sutured at once.

No physician should leave a patient for at least three-quarters of an hour, and better one hour, after her delivery, and he should stay much longer if there has been much loss of blood or other trouble.

Cases of placenta previa should be delivered early. Waiting until infection has occurred or until the woman has become exsanguinated results in disaster. Cesarean section, either vaginal or abdominal, is sometimes the safest procedure in these cases where the cervix is rigid.

A diagnosis of puerperal sepsis should be made only after everything else has been excluded. Too many of us jump at such a diagnosis when called to a woman who has recently been delivered and who has some fever. This is especially true if she has been delivered by the other fellow. The result is many unnecessary curettments and many unnecessary deaths. I have seen a case having almost complete suppression of urine given chloroform and curetted, and death resulted within twenty-four hours. The physicians who did this made no inquiry at all about her kidneys. Every obstetric case is a problem in itself and experience is a great teacher in determining what to do, whether to wait on nature or to interfere.

Practically every woman I have delivered has nursed her baby, and I have had not more than six abscesses of the breast in my practice. The mother who can and will not nurse her baby becomes only partially acquainted with it. She evades the responsibility of motherhood, willfully disregards the health and life of her child, and misses one of the greatest pleasures of life, nursing her baby. Chemical analysis fails to show all the important ingredients contained in the milk of the child's mother.

I do not claim any superior skill in obstetric work, far from it, but I do assure you that I have spent many anxious days and nights in this work and, having been able to pass my twentieth mile post in the practice of obstetrics without the death of a mother will ever be one of the real pleasures of my life.

DISCUSSION.

Dr. C. F. Wilcox, Salt Lake City: Dr. Rich has had this wonderful success because he has not meddled with his cases; he has given them close attention from the beginning and has made few examinations. It is not necessary to make many examinations in obstetric work. You can nearly always make a diagnosis by external manipulation without an internal examination. Infinite patience is the great secret of success. Forceps are used much less frequently than formerly, and nearly all cases will terminate favorably if you give them time enough. Unless there is a definite indication for the use of forceps they are best let alone.

Dr. A. C. Ewing, Salt Lake City: Dr. Rich has had one of the greatest successes that any man could possibly have, practising so long and having so many cases without a fatal result. I have not been as fortunate as he, having lost one case, but I have practised along the same lines, knowing that cleanliness in these cases is next to Godliness. We meet cases that seem to be immune to infection, where dirt, dogs and domestic irregularities seem to prevail. These cases seem to get along just as well as if they had been in a sanitary hospital or in a mansion. I always go prepared with an extra aseptic towel, because frequently we cannot find a towel or anything clean and it is best always to be prepared for those emergency cases.

Dr. A. W. Morton, San Francisco: I was much interested in the series of cases of obstetrics without a fatality and in trying to appreciate this result I can see the reason for it. There is not much danger when you let drainage come out even if you don't disinfect well. The great trouble is when you carry infection inside. While I don't do much obstetrics, if there is anything dangerous in that field it is meddlesome midwifery, and the number of cases the doctor mentioned certainly proves that one point.

IMPASSABLE CONTRACTION OF THE GRAVID UTERUS. REPORT OF ONE CASE VERIFIED BY CESAREAN SECTION. DILATATION OF STOMACH. RECOVERY.*

By E. J. Lawrence, M. D.,
SPOKANE, WASH.

The obstacles encountered in the passages of the fetus from the womb through the birth canal are many and most of them are well understood because of their frequency. In this class we include contracted pelves, a relatively large fetus, a rigid cervix and limited room due to scars and tumors. These conditions if of a mild degree permit of a slow, unaided delivery or instrumentation; but if the obstruction be absolute or endangers the life of the mother or child, Cesarean section is indicated.

An infrequent obstruction that has not been well understood is an impassable contraction ring. Dr. R. L. Dickinson, in his monograph, reports that a review of the literature of the last ten years reveals about thirty available articles in French, German and English that bear upon Bandl's ring. Among these only four were verified by Cesarean section. In countless papers written during that period only four authors mention contraction ring as an indication for this operation.

In considering the contraction ring, the main object of discussion must be the lower uterine segment and what composes it. Bandl started this discussion in 1875 in his work upon rupture of the uterus, the point of which he found being nearly always in the lower uterine segment. His articles were responsible for immense literature and two definite views were taken as to the cause and nature of the lower uterine segment.

According to the first, it is derived partly from the cervix, the internal os being estimated at 4 cm. above the external, while the rest of the structure is formed by the lower portion of the body of the uterus. According to the second view, the entire structure from the contraction ring to the external os is derived from the cervix.

As late as 1905 the Berlin Obstetrical Society was vigorously divided on the subject and each maintained the correctness of their views. Aschoff obviated this difference of opinion by designating the upper and lower openings of the isthmus, respectively, as the anatomic and the histologic internal os.

The contraction ring corresponds to the former, while the lower uterine segment is derived from tissue lying between the two. The structure of the uterus is of importance in this connection, in that the cervix is composed of dense connective tissue, rich in elastic fibres, its upper part changing to muscular lamellae that pursue a parallel course. As we reach the contraction ring the uterine musculature takes on its characteristic appearance. To make the location clear, we have the distance from the external os to the internal os as 4½ cm., the external os to the contraction ring as 6½ cm. and Bandl's ring as 8 cm.

In normal labors the contraction ring is at a level of the inlet, but as labor advances it rises higher. In marked obstruction, that is, where the ring is thick and rigid, it rises to the umbilicus, due to the shortening and thickening of the uterine muscle. According to Dickinson, the cause of the contraction ring is an interference with serous infiltration of the lower uterine segment. This is brought about by rigidity of the cervix, pelvic growths, length of labor, intensity of contraction or other obstruction. In this connection ergot and dilators often cause trouble, but the ring often relaxes ultimately and the real cause of the trouble is overlooked.

To diagnose a contraction ring we use both internal and external methods. In delivery the retraction ring is palpable in any case where the finger can be pushed back of the presenting part, especially when a pain is beginning. The finger reaches a hard projection that represents a ridge about as wide as a finger. As the pain increases, the ring tends to broaden out, due to tension.

The external os is also retracted at this time. When the presenting part is above the ring, the examining finger passes through a tense or patulous canal and the ring is plainly felt below the presenting part like a second internal os. With the ring below the fetus the head is drawn higher than when the contracting ring is about the neck. The pains differ markedly from the ordinary labor pains. They are more of a stone-colic nature and, as my patient said, "You wouldn't let a dog suffer like this." She had previously borne children and was capable of drawing a comparison.

By external means a deep sulcus can be felt when the ring bears in on the presenting part. Any portion of the child may be encircled but, as the head is the most usual presentation, it is the part most often that is held below the ring. In case of twins the second child is completely held above the ring. Any attempt to do version will reveal the ring, in that the fetus cannot be turned and, in attempting it, the hand cannot be passed back of the presenting part.

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*Read before Spokane County Medical Society, Spokane, Wash., June 12, 1913.

The treatment of this condition depends upon the degree of the obstruction. If it be simple, a hypodermic of morphin or an anesthetic will relieve the spasm. The use of forceps is either very difficult or impossible, because the head does not engage and, if a hold be obtained, the forceps will slip. In case the traction is made, the uterus is dragged down with the head and the body of the womb is drawn tightly over the fetus. Forceps extraction, however, is of value in head cases that do not present a marked degree of contraction or tetany. In every labor, no matter how normal it appears, if the head fails to advance when there is no relative disproportion, the ring as a cause must be borne in mind.

Any form of embryotomy should be a last resort and incising the ring has seldom been done, due to the difficulty in reaching it and the danger involved. It would not be indicated where any part of the fetus is below the ring. Cesarean section is the ideal treatment, and diagnosis should make its early use possible so as to avoid a septic canal to interfere with the after-treatment. In case Cesarean section is elected, we must bear in mind that, when the uterus is opened, the ring must be cut at once; otherwise the head is held as in a vice and gives the child little chance for life.

An especially interesting case of tetanic contracting ring presented itself in a patient 38 years old. She menstruated regularly but always suffered pain at such times. Her first marriage was in 1895 and her husband died in 1910. She again married in 1911. By her first husband she had two children, one eleven years old, living, and one died of meningitis at six years of age.

Patient's father died in 1909 of Bright's disease; mother still living at 73 years of age. She has four brothers and three sisters living. She has had typhoid fever and measles and complained of an irregular dull pain in the abdomen.

Her two previous labors were the usual difficult ones. Her first one started Saturday morning with the rupture of the membrane. Quinine to increase pains was given Sunday morning at eleven and the child was delivered by instruments at three p. m.; normal recovery. Her second labor was a dry birth, feet presenting and lasted for about an hour. Recovery normal, with the exception of a large amount of lochia.

I first saw the patient during the eighth month of her third pregnancy. At this time she appeared normal in every way, was not worried, and the urine and other findings were perfectly normal. The time of her confinement was expected about Oct. 12, but she had no definite pains until the 20th. For three days the pains were not strong or frequent and the real onset was not until the evening of Oct. 23. At 7:30 p. m., the pains were quite severe, and dilatation was taking place slowly. At 9:30 the pains were extremely hard, dilatation progressing fairly well, but the head was making no descent. At 11:45 dilatation was complete and the membranes ruptured. The fetal head was presenting normally but was not engaged.

At 1:30 a. m. high forceps was attempted under chloroform. They held fairly well and the head descended a short distance. In attempting to shift the forceps to obtain a better hold, it was found impossible to apply them at all so as to make traction. At 3 a. m. Dr. S. E. Lambert was called and instrumentation was again attempted under deep ether anesthesia but without success, the forceps slipping over the head. Podalic version was then attempted by combined external and internal manipulation but the child remained immovable. In trying to reach the axilla it was found impossible to pass the hand past the head. The reason for this was not apparent at the time.

The patient and her husband were advised of the condition and she was then taken to St. Luke's Hospital. At 8 a. m. she was given ether and prepared for Cesarean section. On examination the fetal heart sounds were clear and distinct. By vaginal examination the child's head was found well within the cervix and above the pelvic brim.

Cesarean section was then done. The uterus bled profusely on being opened and the body of the child was quickly extracted but the head was held fast in the lower segment. Strenuous efforts were made by Dr. Lambert and myself to deliver it quickly, but it was found necessary to divide a well marked ring which encircled the child's neck before delivery was affected. The child was turned over to a nurse but efforts at resuscitation failed. On examination we found that the uterus was divided into two portions, separated by a contraction ring of uterine tissue about one and one-half inches in thickness. This ring was not in evidence from the exterior of the uterus. The placenta was then delivered and the uterus sewed up in three layers. She showed no signs of shock, but dilatation of the stomach developed Oct. 26, two days after the operation. Under gastric lavage this trouble disappeared, although she vomited about two quarts of fluid at one time on the 28th. She left the hospital on the thirteenth day in fairly good condition and made a good recovery.

308 Old National Bank Bldg.

THE LOCAL HEALTH DEPARTMENT.*

By SAMUEL G. PAUL, M. D.,
SALT LAKE CITY, UTAH.
Health Commissioner.

It is not my intention in this paper to take up particularly the work in the Salt Lake Health Department but to consider health measures and the difficulties of their enforcement by health officers generally throughout the state. Therefore, the matter of meat, food, milk and dairy, and school inspections, milk stations, sewer inspections, emergency hospital and laboratory work, garbage collection and disposal will only be mentioned.

I realize there are many different conditions applicable to Salt Lake that may not, for various reasons, be applied in smaller towns or country districts. So far as laws or ordinances are concerned, the Legislature has given both city and county authorities ample power to make any needed regulations pertaining to public health and sanitation with one exception, that pertaining to compulsory vaccination.

Among the most important duties of the local health officer are the registration of vital statistics, the enforcement of the quarantine laws and sanitary code, and the protection of the water supply. One of his minor duties is to listen to the numerous useless and absurd complaints made. These all take considerable time, as the irate citizen must be satisfied, which at times is a difficult matter.

It might be of interest to cite two or three of these complaints, as they occur daily in the local office. Recently a lady came into the office and insisted on talking to one of the doctors, I being the victim. Before I had an opportunity to say anything she started in on a long dissertation about mouldy bread. At once I became interested, as we had a complaint that same morning about mouldy bread. At the first opportunity I asked her where she bought the bread, and she promptly informed me she didn't buy it but her neighbor gave it to her for chicken feed and all she wanted to know was whether or not it would make the chickens sick.

A man connected with a well-known business house in the city called on me personally with the following complaint. He lived in the apartments on the second floor, the apartment over his being occupied by a lady who, as he said, pounded a typewriter all day long, the noise causing his wife to be a nervous wreck, thereby ruining her health. It took some time to show this man that such cases could not be handled by the health department.

Again, early one forenoon a very excited citizen rushed into the office saying he wanted to make a complaint about his neighbor's chickens and chicken-coop, demanding that the health department take action immediately. He informed every one in the office that he was a very nervous man and could not stand for being opposed in anything. He was referred to me and said the crowing of the roosters had so annoyed him that at 4 o'clock that morning he went into his neighbor's yard, knocked two boards off the chicken-coop, entered and wrung the neck of one rooster and five hens, and now he wanted the health department to start proceedings before the neighbor had him arrested.

Back to the real work of the health officer, we will take up first protection of the water supply. In farming communities or small towns where there are no water works system and the supply is taken from wells or running streams, the problems of protection are numerous and difficult. Strict enforcement of the sanitary code in these districts tends greatly to the protection of the water supply, particular attention being paid to the location and construction of privies. Where there is a municipal water system piped we have only to deal with conditions on the water-shed above the intake. This is often a serious matter, as people living on the water-sheds are seldom much interested in the city or town and also often claim prior rights which they think entitle them to pollute the water to any extent they may desire. Of course property owners on the water-sheds have certain rights which must be respected and which will be upheld by the courts. But any reasonable regulation protecting the water supply will be upheld. Every one will admit that the ideal conditions would be for the municipality to own or control the entire water-shed but this is not only impracticable but impossible in most cases.

Again, on the water-sheds a strict enforcement of certain sanitary regulations is essential, especially with reference to location of barns, pig pens, etc., but most important the location and construction of privies and the methods of disposal of the contents. In most instances after explanations the property owners are willing to comply. This, however, answers only one problem, for there may be many temporary summer residents along the water-sheds and many more day campers. These conditions exist on the Salt Lake water-sheds, also railroad, automobile and wagon traffic. For summer campers who have permanent cabins or houses the installation of sanitary privies is required and the canyon patrolmen see that the contents are properly disposed of. For the campers and road travelers Salt Lake City has, on all three of its water-sheds, installed sanitary privies which are maintained and cleaned out at the expense of the city. Railroad traffic is a matter of importance along water-sheds but this subject is too large to enter into a discussion of it in this paper.

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*Read before the Nineteenth Annual Meeting of Utah State Medical Association, Salt Lake City, Utah, Sept. 23-24, 1913.

On the theory that running water purifies itself in ten miles, the legislature has limited the jurisdiction of municipalities on the water-sheds to ten miles from the intake. While there is abundant evidence that tends to prove this theory in the case of broad, slow-flowing rivers, I am not willing to admit that the same thing would occur in our narrow, rapidly moving canyon streams that are also well protected from the sunlight. Of course there is the factor of reaeration which is greater in the mountain streams. So far as I am able to find, there has never been any work done that would tend to prove or disprove this theory with reference to mountain streams. However, I am of the opinion that several or a single case of typhoid fever, not properly cared for beyond the ten-mile limit, would certainly be a source of danger to any city.

So far as Salt Lake City is concerned there were no sanitary regulations beyond the ten-mile limit until the summer of 1913, when the county health department took the matter up and the county commissioners passed an ordinance governing sanitary conditions. With the aid of this ordinance and the work of the county health department conditions have been greatly improved and the possibility of contamination greatly reduced. The protection of water supplies by chemical treatment, filtration and storage I will pass, as none of these methods are in use in this state, so far as I know.

The enforcement of the sanitary code in a large city, although requiring much more work and presenting many different problems, is yet relatively easier than in a small town or country district. In the large city this work is done by inspectors and, whenever they come in contact with an obstinate citizen who refuses to comply with the law, the case is reported to the chief and instructions are given to arrest the offender and let the court decide the case. In the small towns or country districts conditions are different. These communities figure that they cannot afford to pay the health officer a sufficient salary to devote his entire time to health work. Therefore he must depend on private practice for his living and, if he has competition, unfortunately he must protect himself and not offend some prospective patient nor discharge himself from some family he is already attending. This same condition applies also to the enforcement of quarantine laws and in neither case does it speak well for the interest medical men are supposed to take in the prevention of disease. In view of the fact that the above conditions exist it would seem to me advisable that in small towns the enforcement of these laws should come under the town marshal.

In the enforcement of the quarantine laws and in the registration of vital statistics, the health officer comes in more direct contact with the medical profession. I have no complaint to make with reference to Salt Lake in the matter of reporting contagious diseases nor the cooperation of the medical men in this work. I am satisfied that a great majority of cases are reported promptly and I feel absolutely safe in saying that no city, small or large, in the United States comes nearer getting an accurate report of their contagious cases. However, do not get the idea from the foregoing statement that we are not on the lookout for negligent members.

In the small towns as well as in larger cities there is often the question of diagnosis. Locally the health department has many times been called on to make the diagnosis and determine whether a quarantine shall be established. The responsibility is always gladly accepted, for we always aim to play on the safe side, as the health officer's whole occupation is the prevention of disease. Here, again, difficulties arise in the small town, where there is a difference of opinion between two physicians. In such cases the state board of health should be equipped so that a man could be sent out to determine on the safe side what should be done. There are some physicians who figure that in a questionable case the patient should be given the benefit of the doubt. A health officer should never take this view. The public should be given the benefit of the doubt for obvious reasons.

I recall the case of a boy about ten years old who applied for a permit to reenter school, stating that he had had a sore throat. The permit was refused and a throat culture taken. The next morning the culture showed an almost pure Klebs-Löffler growth and the case was quarantined. War broke out, the family physician and two other doctors being called in, all stating there was no clinical evidence of diphtheria and demanding that the case be released. The health department stood on its evidence. Thirty-six hours later the case was reported by one of the doctors with congratulations to the health department for keeping the child out of school.

In my experience vital statistics is the one most sensitive spot to the physician, not so much in the birth reports as in the certificate of deaths. I could cite many amusing cases about birth certificates but I have not the time and will take up the serious and more important side of this matter. Some physicians assume that the reporting of births is a duty imposed upon them by the state for which they get no remuneration. I maintain that it is a duty they owe their patient, as the proper registration of the birth is of as much or more value to the individual than it is to the state. The value to the state is purely statistical, while the value to the individual in many cases cannot be figured in dollars and cents. I could recite many instances where copies of birth certificates were of the utmost importance. To the present time this has applied more particularly to foreigners, as the laws in Europe are more stringent than here.

I recall one instance where a request was made for a copy of a birth certificate. A boy was on trial in Kansas City who claimed to be under age, coming within the jurisdiction of the juvenile court. Not being able to prove this he would come within the jurisdiction of the district court and be tried for a felony. In another case I received five or six letters and many long telegrams from a former resident of Salt Lake who had moved to New York. We finally found the attending physician and he filed a certificate for the child, who was then six years old, some inheritance or insurance matters being involved in this case. In such cases I fail to see where the attending physician got even with the state by saving an envelope, a two-cent stamp and five minutes' time.

The registration of deaths in this state is or should be governed by the International Classification. Many physicians evidently do not appreciate the object nor the need for correct death reports. Many times, when the physician is asked for a more definite cause of death, he becomes angry and wants to know what right some cheap clerk has to question his diagnosis or wants to know from what correspondence school the clerk got his M. D. degree. As a matter of fact, the clerk is governed by the International Classification of causes of sickness and death. This book was compiled by some of the best known physicians in the world and is in use in nearly every civilized country. Therefore, the uneducated clerk is not making any arbitrary ruling. I might relate many cases in the local office where death certificates have been returned for more definite information and in most cases the physicians have willingly complied. Only in occasional cases does the doctor get on his dignity. I understand that more trouble is experienced throughout the state.

Personally I have no complaint to make so far as the local health department is concerned, as we have been well supported by the medical profession and only in rare cases have we had any difficulty. The remarks with reference to quarantine and vital statistics have been made in the hope that physicians will take notice and give a little more attention to these matters, especially vital statistics.

DISCUSSION.

Dr. R. W. Fisher, Salt Lake City: It is a shame and a disgrace the salaries that are paid by the state and the city to their health officers. Petty officers of the state receive more remuneration than the majority of health commissioners. Why communities so often wish to change their health officers after they have become efficient is a conundrum. The colleges are now educating men for health work, and I hope the time will come when it will be impossible for any man to be a health commissioner without a degree from some qualified school, and who is by training competent to fill that position. Salt Lake City is spending at least four times as much on its health department as when I first was on the board of health. Also the garbage collection is much more thorough than in the majority of cities and the character of garbage is more extensive. I must disagree with Dr. Paul in one matter. I do not think the physician should be compelled to send in birth reports unless paid for it. We are living in a commercial age and we might as well be paid for what we do. The individual is the one who gets the benefit of it and he should make the report. In Italy and some other countries the parents are required to make the report for services rendered. I think it is a wrong idea that the doctor is the natural guardian of the community and is in duty bound to give his services to protect it, and if he is not remunerated for it here he will get his pay in the next world. I think any service rendered the state should be paid for.

Dr. R. W. Ashley, Salt Lake City: The man who will turn in a birth certificate for twenty-five cents when he won't do it for nothing had better start all over again. In regard to death certificates, we had a case not long ago where a doctor signed the cause of death as "operation." He specified what the operation was for, but did not say what killed the woman. After fighting it out with the doctor and looking the thing up in the international classification of causes of death, for "cause of death" we wrote the doctor's name and sent it to Washington, much to the doctor's disgust, but we were perfectly justified in doing so. In regard to quarantine, we have tried to impress upon the doctors of Salt Lake that when they get a case where they were afraid to say it was quarantinable, to throw the responsibility on the health department. We have been called every name in the calendar and one more will make no difference. The thing to do is to give the public the benefit of the doubt instead of the individual case.

The county officers established sanitary toilets, for which we are indebted to the influence of Dr. Snyder with the county commissioners in getting them to spend that much money. The Rotary Club has been advocating for the last two years the opening of City Creek canyon for an automobile road. The sanitary committee has persistently opposed that move on the ground that it is not adapted for such a road. Dr. Paul opposed it on the ground that, if road houses were established in the canyon, the water supply would inevitably be contaminated. Examination shows that City Creek water is the purest we have now. Bacteriologic examination of the stream in Parley's canyon shows there has been some contamination.

Dr. A. A. Kerr, Salt Lake City: I wish to congratulate our very efficient board of health for the work it has done. We are fortunate in having men who do things and it has been a pleasure to be associated with the board. It has done a lot of good towards the moulding of public sentiment. I speak particularly with regard to the water supply. We get our water from Big Cottonwood, Parley's canyon and City Creek canyon. The object of the sanitary committee was to improve the water supply as much as possible. With that object in view the committee of the Commercial Club, on which Dr. Tyndale and myself served, held about twenty meetings at the Commercial Club with men of different communities.

MEDICAL INSPECTION OF PUBLIC SCHOOLS.*

By E. A. Montague, M. D.
TACOMA, WASH.

In 1900 medical inspection of schools existed in only eight cities of the United States. From then the work spread rapidly and now over 500 cities maintain the work. No school nurses were then employed but now over 100 cities make use of them and over 75 cities employ a staff of school dentists. The specific objects of medical inspection of schools are: (1) the detection and correction of physical defects, (2) the detection and exclusion of parasitic and contagious diseases, (3) the maintenance of good hygienic conditions, (4) the diagnosis of mental deficiency.

There are about 12,000 school children in Tacoma who constitute 10 per cent. of our population. Of these 34 per cent. are suffering from remedial defects which are more or less interfering with their physical, mental and moral advancement. Visits are made to each school once a month. Children of the eighth grade are given a routine examination each year, those of the lower grades having examinations twice a year. The cooperation of teachers more than doubles the efficiency of medical inspection. Some seem oblivious to anything short of an epileptic convulsion, while others who teach children rather than subjects detect many defects as soon as opportunity is given them. We have teachers who segregate adenoid and eyestrain cases and send them to the inspector before the systematic examination of classes begins. The principal, through his opportunity to stimulate interest, is an important factor.

We send out the following notices to teachers:

Teachers are particularly requested to note and send to the medical inspector all cases of poor eye-sight, nasal obstruction and defective hearing. The following are the principal defects of school children: (1) Eyestrain, (2) deafness and discharging ears, (3) deformities, (4) nose and throat obstructions, (5) decayed teeth, (6) poor nutrition, (7) nervous disorders, (8) mental defect.

This notice gets a hearty response and keeps both nurse and inspector busy.

The contagious diseases we have to deal with include minor skin affections such as impetigo, scabies, ringworm and pediculosis. All sore throats or a rash are sufficient causes for exclusion from school. Suspicious cases of chickenpox require examination of back and chest. As this usually occurs in small children, there is no objection to the examination. Cultures are taken of suspicious sore throats. If more than one case of diphtheria occurs in a room, cultures are taken of the entire class. They are dismissed for a time and the room thoroughly fumigated before they are allowed to go on with their work.

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*Read before Pierce County Medical Society, Tacoma, Wash., March, 1914.

Mild cases of infection sometimes lead to dispute between parents and medical inspector. This is particularly true of mumps and chickenpox which cause the exclusion of their victims from school. Before we had a system of exclusion this gave us no end of trouble. We required a physician's certificate before permitting the child to reenter. This method failed to give satisfaction, and we found physicians giving certificates without making an examination of the child, thereby permitting the child to reenter school before the danger of infecting others had passed. The system in vogue now is highly satisfactory. A simple chart is prepared, classifying all contagious and infectious diseases and the number of weeks the child is to be excluded, except in case of diphtheria, scarlet fever and smallpox, for which a release card from the health department is required.

Owing to public sentiment and the physicians themselves, compulsory vaccination is not carried out. It is the custom of the board of education to offer free vaccination after a primary official request to be vaccinated has been ignored or refused.

In our routine examinations, for lack of time, we can make only a hasty inspection for eyestrain, nose, throat, decayed teeth, poor nutrition, orthopedic defects and skin diseases. A record of all pupils from the time they enter school to the fourteenth year is kept. This gives the name, the room in which the child may be found and afterwards whether or not the defect has been corrected.

It may be noted that this record is advantageous for the first of the school year, as the inspector by referring to it can readily bring before him all the defective cases which have neglected to procure treatment and stir up the parents with a second notice before the routine examinations of children begin. If the defects be of a serious nature, the school nurse calls on the family and requests them to consult their physicians. Poverty in these cases is no excuse, since free medical services can always be secured.

The school nurse is invaluable and is doing more practical good than can be described. She is assigned to a certain number of schools. She is at the school each day during the visits of the medical inspector and assists him in his work. She treats ringworm, inpetigo, scabies, head lice, etc., in order to save these children from exclusion from school.

The nurse must be exceedingly careful to avoid doing the child mischief or placing herself in the unfortunate position of being censured by ignorant parents. For this reason deep wounds involving more than the skin, imbedded foreign bodies, sprains, etc., are promptly sent home with instructions to the parents to seek at once their family physician.

The cases of defective vision, adenoids, tonsils, decayed teeth and other defects are taken up and inquiry made of the children if the official recommendation has been heeded or not. If not, a call is made on the parents and they are again urged to attend to the matter; in some cases the family physician or specialist is called up and made aware of the circumstances.

The school nurse now includes an occasional crusade for cleanliness by a search for pediculi in the hair of the children. This is not done as a regular procedure but only upon request. Parents are apt to take offense at the forced examination of their children and among the elder children some mental distress results.

Home visits as a rule are for the purpose of urging parents to act. No treatments are given unless for the poor or ignorant when suffering from head lice, scabies or filth. The nurse secures cooperation with indifferent parents, the results along this line having been marvelous. She often suggests proper diet by substituting milk for coffee, or properly cooked cereals for fried pancakes. In summing up, the chief business of the nurse is to shorten or obviate the period of exclusion from school of children suffering from minor contagious diseases, to secure the correction of physical defects by means of personal interviews with the parents. She follows up cases that have been urged to consult a doctor and in some instances takes the child personally to the family physician.

The results of the school nurses' work are remarkable. Contrasting the medical inspector's working without a nurse and that of an inspector with a nurse, the economy practised by the school board is manifest. Just as in the business world sales are made by personal interviews rather than by impersonal announcements and advertisements, so a nurse personally interviewing a mother explains to her the benefit of medical attention to her child, clears away misunderstandings as to the purpose of medical inspection, and generally knits together the harmonious relations of the home and the school.

For lack of funds the fresh-air school room has not yet been organized. The equipment and maintenance of the open-air school necessitates for each child an Eskimo suit, double wool blanket, felt shoes, cots, a foot warmer, provision and milk. All this, with the expense of special instructor, cook, matron and conveyance to and from school, would cost $150 per capita.

From September, 1911, to June, 1912, we examined 6,341 children. We found defects as follows: Defective eyesight, 4 4/10 per cent.; nose and throat (enlarged tonsils, nasal obstruction, nasal catarrh, adenoids), 35 per cent.; defective hearing and discharging ears, 6 1/10 per cent.: decayed teeth, 72 per cent.; skin diseases, 4 3/10 per cent.; miscellaneous (poor nutrition, chronic cough, orthopedic, urinary, cardiac), 6 8/10 per cent.

The success of the work of medical inspection is judged by the reduction of the number of cases of contagious diseases and the number of physical defects corrected.

Regarding the suppression of contagious diseases, we have unfortunately few trustworthy figures. In the case of measles (and possibly chickenpox) we have a disease so contagious that its occurrence depends on the number of non-immune young children that have arrived since the last epidemic. However, we can recall instances in which diphtheria or scarlet fever epidemics have been checked. On the other hand, we admit that contagious diseases will continue as long as bad drainage conditions, poor ventilation and unhealthy throats exist. Regarding the suppression of the minor contagious diseases, the work of the medical inspectors and nurses has produced marvelous changes. The number of pediculosis, ringworm, scabies, eczema and impetigo are almost nil in some of the schools.

CANCER OF THE BREAST.*

By J. W. Aird, M. D.

PROVO, UTAH.

In the present day spirit of the profession as to educating the laity on the cancer problem I have undertaken this paper, more with the hope of benefiting myself and others than of adding anything new to the literature. As part of what I have to say applies to cancer in general, regardless of its location, nature and etiology, I shall make a few general remarks.

Cancer is one of the biggest problems of the medical profession today. To get the best results we must have the cooperation of the laity; therefore, we should avail ourselves of every opportunity to impart our knowledge to those about us. While the specific cause of cancer has not as yet been discovered, yet our knowledge is such that we can and are doing much in way of prophylaxis and cure.

With many of us much more could be accomplished if we would educate the laity. A short talk, like the following, at opportune times, on the early symptoms of cancer, its nature and the evidences of its being a local disease in its early stages would do much toward getting rid of delay. Explain to your friends and patrons that all the knowledge we possess about cancer points to its being a local disease in its incipiency. Go into detail with them, showing that it first appears as a minute nodule, or more rarely as an ulcer, without pain or constitutional disturbances, and as it develops with age it becomes larger by infiltrating the surrounding tissues and by multiplying its own cellular elements, becoming painful as time progresses. Finally it enlarges the adjacent and sometimes distant lymphatic glands, which show the same cancer cells with the same behavior as the parent cells in the original tumor.

For further clinical proof, if the small nodule or ulcer be removed early, before any extension or metastases have taken place, the patient is entirely freed from the cancer. As strong clinical evidence of its local nature, explain that in its early stages health is unimpaired, but as time goes on the patient becomes anemic, cachectic and suffers from the toxins elaborated in the growth. Explain that the evidences of cancer being a local trouble at first are equally convincing from the pathologic and microscopic standpoint. Macroscopically the tumor is seen on section to invade normal tissue, the invasion being the greatest at site of the original tumor. This holds good also as to the microscopic findings. As we go farther and farther from the focal point, we find less and less infiltration by cancer cells, until we get well free from what appears to be the abnormal growth, when no cancer cells are found.

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*Read before the Nineteenth Annual Meeting of Utah State Medical Association, Salt Lake City, Utah, Sept. 23-24, 1913.

Explain, accordingly, there evidently was a time when practically every cancer, almost regardless of its location, was curable by surgical measures. Teach them that removal, other than by the knife, is effectual in a certain percentage of cases, such as cautery, pastes and x-rays, but the knife, properly and judiciously used, gives the largest percentage of recoveries. State that the evidence is practically nil of cancer being curable by cellular change and absorption, as would have to occur by the use of serums or constitutional medication and likely will continue so, at least until the specific cause of cancer is discovered. While this is yet a mystery, much is known or is being learned about the predisposing causes of the disease; in fact, so much that we are now beginning to speak of precancerous conditions and are advising dealing with this maligant malady in a prophylactic way.

Wilson and others are trying to show that the segregation of epithelial cells through inflammatory processes is a big factor in development of cancer. Certain it is that chronic tissue unrest is a factor in a predisposing way. Prenatal segregation of epithelial cells (incomplete development prenatally of the mesothelium) is also thought to be a factor in cancer causation. This, however, would be harder of demonstration than the postnatal segregation through tissue unrest or chronic inflammation. The findings of pathologists have been practically the sole means of our knowledge and advancement in treatment of this disease. Together with our prominent surgeons, like the Mayos, Bloodgood, Keen, Rodman and others, they have shown us that ulcer of the stomach, chronic appendicitis, gallstones, cholecystitis, hypertrophied prostate, diverticulitis, lacerations of the cervix uteri; tissue irritation of a chronic character of lips, tongue, face, neck, etc.; hemorrhoids, fissure in ano, moles and other neoplasms, chronic cystic mastitis, subacute inflammatory mastitis or even acute suppurating mastitis, where hardness of tissue remains, are all potent in the causation of cancer or favor the malignant degeneration of the tissue so irritated.

This being true, the surgeons of today are doing much in a prophylactic way, as is evidenced by the reports from the Mayo clinic, as well as from some smaller clinics. MacCarty found that in 5000 removed appendices 22 were cancerous, 44/100 of 1 per cent. and, as I understand it, this was in cases where malignancy was not suspected. This, then, surely goes to prove the statement that surgeons of today are doing much in a prophylactic way, by dealing with the foregoing pathologic conditions, not with this being the main object in view, though the prophylaxis is effectual and real.

In England it is estimated that one of every eight adult women has cancer and that one of every eleven men has the dread disease. Some observers think cancer is on the increase and give various reasons for it, while others think the increase is more apparent than real. Nothing definite has as yet been proven. At the present time the Mayo clinic is preparing some valuable statistics on cancer of the breast which will be accessible in a month or so.

Prophylaxis of cancer in general is in advance of prophylaxis of cancer of the breast, the reason being, I think, that many physicians, when they meet neoplasms in the breast, are afraid to speak and deal with them as they themselves think best, or else they are ignorant of the risk they are taking in keeping the tumor under observation for a period of a few months to a year or more. As it has been estimated by good authority that 95 per cent. of all tumors in the breast are either malignant or will become so, if not removed, we should wake up to our duty toward such patients, and deal with the pathology at once and that, too, in the proper way. Not only this, but the female breast is perhaps more frequently attacked by cancer than any other organ of the body.

A differential diagnosis between benign and malignant tumors of the breast is not always possible, but such patients can much better bear the somewhat mutilating radical operation than take the risk of simple removal of the tumor itself. Early diagnosis in these cases, as in appendicitis and many other conditions, calls upon the physicians of today to be up and doing. It calls for a greater diagnostic ability than formerly. If all cancers are curable at an early stage, as I believe them to be, then we are assuming great responsibility in any delay in making proper observations and a proper study of the case in hand.

I have purposely omitted symptoms, diagnosis, pathology, etc., knowing they can be gotten out of textbooks and other literature much better than I can give them. I simply wish to urge you at once to start the careful study of any neoplasm found in the breast and, if you cannot satisfy yourself as to its nature and proper handling, ask for competent consultation, for in most of such cases the patients themselves have already delayed longer than wise.

It is but a few years since the average layman had to have much and lucid explanation that the danger is not in the operation for appendicitis but in the disease itself or in delaying operation. Now most laymen understand this. The same education must be undertaken with regard to cancer. C. H. Mayo tells us that on an average in one in thirty cases, where gallstones have chronically irritated the mucous surface of the gallbladder or its ducts, we have cancer developing. And in nearly all of the cases of primary cancer of the gallbladder and bile ducts, gallstones have been found. These, findings, together with W. J. Mayo's observations and findings in regard to about 70 per cent. of cancers of the stomach developing on old ulcer bases, should teach us the importance of avoiding and getting rid of irritation and of all chronically inflamed tissues whenever possible.

Therefore, as pointed out by the Mayos, Bloodgood, Rodman and others, the way to attack this cancer problem is to educate laymen and physicians in recognizing the precancerous conditions and cancer in its incipiency, and dealing with such surgically. This is especially true of pathologic breasts. Many lives are annually lost and much suffering experienced through delay, both by the patients themselves and by their physicians.

If pain were an early symptom of carcinoma of the breast, our percentage of cures would be much higher than it is today. To make up for this lack of pain, education of the laity must be begun. In this way we will reduce our mortality from about 70 or thereabouts to somewhere in the neighborhood of 25 per cent. Rodman has shown that early radical operation will cure 80 per cent of carcinoma of the breast, whereas in late operation, after axillary glands are involved, 25 per cent. of cures is about all we can expect.

It is evident from all statistics along these lines that we now have a very large and varied field in which to make improvement in cancer cure. Nor is the surgeon held blameless for such a large percentage of fatalities. He often shares in the responsibility for high death rate by not being radical enough and not realizing that one can transplant cancer.

As to the operation for carcinoma of the breast, I shall mention only a few points which make for success. To go into lengthy detail in regard to any special incision or special method of operating would be folly. The best results are obtained by the optimistic, radical, real surgeon, the one who has good surgical judgment and removes the entire breast together with the overlying skin, especially well wide on the side where the tumor exists, together with the pectoral muscles, axillary glands and all gland-bearing tissue. In doing this some few points should be observed, such as working from above downward, being careful to not break or cut enlarged lymph glands, disregarding the smaller axillary vessels and nerves, lest you should leave behind some of the disease or transplant it. Never simply remove a tumor of the breast unless you know it to be benign. Never simply remove a tumor and wait any length of time to perform a radical operation (if it prove under microscope to be malignant) with any hope of a cure. Rodman advises the use of the cautery on cut surfaces under such circumstances, even though the pathologist can make his report in a few minutes' time. The observance of these measures will certainly carry many more patients over the three year time limit and will reduce our mortality to some degree, even in late breast cases, and will almost certainly afford permanent cure in the early ones.

TREATMENT OF ASIATIC CHOLERA AT SAN LAZARO HOSPITAL.

(Abstract.)

By A. C. Garton, M. D.,
MANILA, P. I.
Bureau of Health.

At the San Lazaro Hospital the treatment for cholera has varied considerably in the last twelve years. In 1902, Dr. Freer suggested the use of acetyl-benzoyl peroxide. For the purpose of oxidation potassium permanganate has supplanted this and is known as the Rogers treatment. Treatment with acetyl-benzoyl peroxide in 120 cases gave a mortality of about 60 per cent. In 1908-9, in a series of 450 cases, with intravenous injections of normal salt solution and with symptomatic treatment, the mortality was 50 per cent. In 1910 two comparative series of cases were treated with sodium chloride in one and sodium bicarbonate or sodium acetate in the other by intravenous transfusion. With the sodium chloride treatment in 56 cases there was a mortality of 71 per cent. Treatment with sodium bicarbonate or acetate, out of 55 cases there was a mortality of 51 per cent. The use of sodium bicarbonate in solutions of 1 or 1½ per cent. showed encouraging results in the prevention of death from renal insufficiency but was not entirely satisfactory during collapse, so it was found advisable to use the sodium chloride solution in collapse.

The present treatment consists of intravenous injection of a solution containing 9 grams of sodium chloride, 5 grams of sodium bicarbonate and 0.40 grams of calcium chloride per liter. At times the percentage of sodium bicarbonate has been increased but never above 1 per cent. In a few cases which did not improve with the above treatment four to eight cubic centimeters of a 1:1000 solution of adrenalin chloride was added. The value of the drug could not be ascertained as the cases were mostly in extremis.

By mouth was given calcium chloride, potassium permanganate either separately or mixed. Later it was found preferable to use calcium permanganate, as suggested by Rogers. This was administered in solution containing per liter from 4 to 6 grains.

Symptomatic treatment consists of strychnin, digitalin, strophanthin, ammonium carbonate and external heat. As atropin has been found to be an antidote to several of the toxins found in cultures of the cholera vibrio as well as such poisons as neurin and muscarin, its use is highly recommended. In several cases of profuse perspiration, pulmonary edema and continued evacuations, repeated intravenous injections followed by hypodermics of 1:100 grain of atropin were followed by marked improvement. The use of atropin is not always indicated, as frequently perspiration is a conservative attempt of the system in endeavoring to rid itself from toxins. Its use is especially recommended only for the indications mentioned above. Furthermore, during epidemics it is necessary that a routine treatment be adopted which shall not be harmful to those cases which only resemble Asiatic cholera.

As regards the amount of fluid necessary for injection, it was found to vary from one to four liters. The first liter is run in slowly and the subsequent amount necessary will be ascertained as relief is found from dyspnea, muscular cramps and from the sensation of constriction in the chest. Care should be taken to avoid excessive arterial tension, pulmonary edema, cardiac distress or cephalalgia. When the urine voided daily amounts to 600 cc. or a liter, the patient may be considered well on the road to recovery. Immediately after the intravenous injection there follows a chill first and then a sense of complete comfort. Permanent recovery seldom occurs after the sixth collapse.

Heart Lesions Produced by Spirochete Pallida. Conclusions: These studies of cardiac syphilis would show that the primary lesions produced by the Spirochete pallida may be either parenchymatous or interstitial. The parenchymatous lesions are a peculiar pale degeneration, fatty degeneration, simple atrophy and necrosis; the interstitial lesions are the occurrence of a peculiar form of edema (myxedema), vascular and perivascular infiltration, and localized myxoma-like formations. The parenchymatous changes may occur absolutely independently of the interstitial, and the latter may be found with no associated changes in the neighboring heart muscle. The more marked the interstitial changes the more likely are parenchymatous changes to be associated with them, but the most marked parenchymatous lesions may occur without any interstitial changes. The purely parenchymatous lesions are found especially in virulent congenital and active secondary and early tertiary syphilis; in milder and older infections the interstitial changes, particularly the localized vascular and perivascular proliferations, predominate. The myxoma-like formations resembling undifferentiated gummas also occur in more localized and milder infections.

It is also of great importance to know that the heart is so frequently the seat of spirochete localization. The cardiac localization of spirochetes we have found to be more common than the hepatic. Spirochetes may be found in great numbers in the heart when no others can be found elsewhere in the body. In such cases the cardiac muscle may also show no lesions that, according to the older knowledge, would be classed as syphilitic, indeed, no organ or tissue may show any histological signs of syphilis even when the organisms are present in great numbers. That syphilis can produce purely parenchymatous lesions primarily in the myocardium opens up greatly the possibilities of this infection as a factor in the increasing myocardial affections of unknown origin. To what extent the Spirochete pallida is the etiological agent in these conditions cannot be estimated with certainty at the present time, but my own experience would make me believe that syphilis, both congenital and acquired, is the most important etiological factor in the production of cardiac disease, both myocardial and endocardial.—Warthin, Am. Jour. Med. Sc., May, 1914.

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EDITORIAL

DR. C. J. SMITH AS GOVERNOR OF OREGON.

The state of Oregon has become distinctly a breeder of physicians with the essential qualities for efficient officeholders. Harry Lane, twice elected mayor of Portland, is at present a conspicuous example of a successful United States senator. Now comes Dr. C. J. Smith, nominated for governor of that state. The whole state and the medical profession particularly have good reason to rejoice over his nomination. No man in any trade, profession or calling is better fitted for a high administrative office than he. In the very prime of life, born in 1864, he has made a success of his every undertaking. In Pendleton, where he practised for twenty years, he had the largest practice of any man in Eastern Oregon. He invested his earnings judiciously and amassed a fortune. C. J. never does anything half way. He is never idle for a minute except when he sleeps, and he does not sleep much. If he gives the state's affairs the same attention he has given all his own, they will be well managed, and no state ever has had or ever will have a better governor.

Despite his busy life and very large practice, no man in the medical profession has given more of his time to the public. He served eight years in the state senate—four regular and two special sessions—and was on the job every minute. Look up the legislation and you will not find Smith, of Umatilla, absent or not voting. He has served many terms as school director, and is a recognized authority on school architecture and pedagogy. He has served on the board of higher curricula. Since the establishment of the State Board of Health, in 1903, the two Smiths, Andrew C., of Portland, and C. J., of Umatilla, have been the wheel horses, the impelling power, if you please, of the board—well balanced, sane, sensible, and up-to-date in all matters of preventive medicine. The work accomplished, the influence and standing of the Oregon State Board of Health, has been possible only through the work of the two Smiths.

Dr. C. J. Smith was one of the first physicians in Oregon to become a member of the American Medical Association, he being one of its nine members in that state. He was president of the Oregon State Medical Association and twice a delegate to the A. M. A. He has been for twelve years one of the councilors of the state association and chairman repeatedly of the legislative and scientific committees. No man in the state knows or realizes its needs better than he, but more important, no man better knows the home and its needs. In what calling in life can any man equal the honorable physician in his intimate knowledge of homes and families? A man, who for a quarter of a century has practised general medicine, knows his people and their needs better than the lawyer, the preacher, the teacher, the farmer, the blacksmith or any other vocation man may follow. Every decent physician in Oregon is behind Dr. Smith's campaign and, while discarding a lucrative medical practice for the worries of the governorship and a $5,000 a year salary is a sacrifice, he will at the completion of his term receive the plaudits not only of his brother practitioners, but of all the fair-minded citizens of this great state.

THE 1915 MEETING OF THE AMERICAN MEDICAL ASSOCIATION IN SEATTLE.

The King County Medical Society and Washington State Medical Association have extended to the American Medical Association an invitation to hold its 1915 meeting in Seattle. Conditions seem propitious to make this the city of choice for that meeting. The opening of the Panama exposition, at San Francisco, with the accompanying excursion rates, will attract large numbers of Eastern people to the Pacific coast next summer. Thus is provided the best opportunity for this great meeting on the Pacific coast which will be available for many years to come. Since the association has in past years met in San Francisco, Los Angeles and Portland, Seattle is the one remaining large city which has not thus been favored. Hence the Seattle profession will anticipate the cooperation of the physicians of California and Oregon in support of their request for this meeting.

Seattle is preeminently fitted for entertaining such a large scientific gathering. The buildings of the University of Washington situated in this city offer an ideal accommodation for such a meeting. The university auditorium has abundant provision for the general sessions and all the sections can be accommodated in lecture and class rooms, distant but a few moments' walk from each other. No university in the country has a more picturesque and beautiful site than Washington. The summer climate of Seattle is unrivaled for equability and mildness. No excessive heat nor dampening rain is to be anticipated in the summer season so that climatic conditions of an ideal character can be assured to Eastern visitors. The scenery of mountains, salt and fresh water is such as cannot be duplicated, while the proximity of varied and attractive excursions will suffice to occupy every spare moment from the scientific program. Hotel accommodations are abundant to provide for all visitors coming to the city. The physicians of Seattle, supported by those of the state of Washington, are united in urging upon the American Medical Association the desirability of coming to Puget Sound next year. The profession of the United States is assured that, if this city be selected for the meeting, this annual gathering will be one which will remain fresh in their memories for many years to come.

THE NEED OF ACCURATE VITAL STATISTICS.

The importance of collecting accurate vital statistics has never been fully appreciated in the United States until the past few years, although in the countries of Europe this matter has been attended to with the greatest care and accuracy for a long period. The necessity of correct records of deaths and births for the determination of family relations and the distribution of inheritances has been brought prominently before the public by the demonstration of some lamentable cases within recent years, so that at the present time there is a general awakening among all the states in order that vital statistics may be correctly assembled and standardized. About twenty years ago the Census Bureau instituted vigorous efforts to accomplish these results, through the establishment of registration areas for the collection of birth and death statistics. In order that a state may be thus classified it must adopt what is known as the "model law," with suitable appropriation for its enforcement. When sufficient time has passed for the national authorities to prove the efficiency of the law and that the latter gives approximately complete returns, the state is admitted to the registration area. Four years ago Washington was admitted to this classification as regards death returns, at that time California and Colorado being the only states west of the Mississippi river which were thus included.

Statistics as to the registration of births is still so generally faulty that only Pennsylvania and Michigan, in addition to the New England states, have yet been admitted. The Washington State Board of Health is making active efforts to obtain a sufficient showing to entitle her to a place among these birth registration states. To this end the vital statistics law was amended at the last session of the legislature to permit the establishment of many small units of registration outside of the incorporated cities. Accordingly the State Commissioner of Health has appointed a large number of local registrars, sufficient to make the law effective. Their duties are to issue permits for burial and to keep complete records of deaths and births, reporting the same to the Commissioner of Health. Although this new system has been in effect but a few months, gratifying results have already been obtained in the increased number of births and deaths which have been reported. Reports of death are naturally much more complete than those of births, since burial is illegal without first securing a burial permit and these events obtain more or less publicity. With births, however, accurate records are secured with much more difficulty. Complete returns are dependent upon the interest and activity of physicians, midwives or parents. In this connection it is desired especially to impress upon the physicians of the cities the urgent necessity of accurate returns of birth. Enrollment in the registration area for births will be determined chiefly upon the completeness with which returns are made in the cities. Not alone should pride in complete records be an inspiration for attention to these matters but the interests both for the present and future of subsequent generations should inspire any conscientious physician to careful and prompt returns of births.

THE MOST HEALTHFUL SECTION OF THE UNITED STATES.

According to the latest returns from the census bureau the Pacific Northwest presents the lowest death rate in the country, led by the state of Washington, with a rate of 8.5 per thousand. Seattle has the lowest rate of all the cities of the

United States, being 8.4, Spokane following with a rate of 8.9 and Portland third with 9.5. What better advertisement than this could be presented to the world to prove that Washington and Oregon constitute the leading health resorts of our whole land? Equally significant are figures presented in the *Journal of the American Medical Association* on typhoid deaths in large cities. Reports are given from the fifty-one cities of the country having a population of over one hundred thousand. The death rate from typhoid ranges from 4.9 per 100,000 population for Seattle to 41.8 for Toledo, showing Seattle to have the lowest rate for this diesase of any city in the United States. Spokane with 7.2 and Portland with 7.8 also present rates among the lowest. While some attribute this remarkable health condition to climate and the youth of the population, there is no denial of the fact that Seattle's incomparable water supply, the strict supervision of the milk supply, the control of infectious diseases on the part of the local and federal health departments are controlling factors to produce this result. Although Seattle has during recent years spent sums for its health department which have been criticised as excessive, these undeniable facts as to death rates and healthfulness seem to justify the expenditures. Her citizens have a just cause for pride in a health department and its executive in recent years which can produce such results, unique in the history of cities.

AN IMPETUS FOR THE PRODUCTION OF PURE MILK.

In conjunction with the Department of Health of Seattle, the King County Medical Society has instituted competitive contests for pure milk among the dairymen of the county who provide the milk supply for Seattle. A silver cup, costing $100, has been put up for a prize. The dairymen's milk is to be judged every three months, being divided into the three classes of raw, pasteurized and certified. Samples will be taken at any time or place from the delivery wagons and be subjected to the prescribed tests for purity. The winner of each contest will have his name inscribed on the cup. Any one winning three contests receives a silver miniature cup, a replica of the large silver cup. In course of time, if any dairyman is fortunate enough to secure a sufficient number of the small models, he will become possessor of the large cup. Already the dairymen of the county are entering into this contest with great zeal, all of which is greatly for the promotion of pure milk for the city.

ANNUAL REPORTS OF THE A. M. A. CHEMICAL LABORATORY.

The volume containing the annual reports of the chemical laboratory is now ready for distribution. It consists of three parts—reprints of contributions, reports abstracted from the journal and reports not previously published. This volume contains a mass of information which should be at the disposal of every physician. In it are found investigations of the laboratory as to the composition of drugs, the analyses of proprietary and patent medicines with which the medical profession has been exploited in recent years, as well as analyses of foods and preparations which are constantly used by the profession. Every physician should be in a position to refer to this book on short notice. It can be obtained post-paid for 25c from the American Medical Association, 535 North Dearborn Street, Chicago.

NEXT MONTH'S MEETING OF THE PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

This meeting will be held in Seattle, July 1-3. It is expected that physicians interested in this line of work will attend from all the cities of the Pacific Coast and British Columbia, west of the Rocky mountains. The provisional program, herewith published, will indicate the character of the papers to be presented and the fact that this will be one of the most interesting meetings which have been held in this specialty.

The necessity is urged on all visitors of obtaining receipts for tickets purchased to Seattle. On presenting these to the secretary of the meeting for endorsement the return ticket can be purchased for one-third fare, provided fifty such receipts are in hand. To obtain this reduction it is essential that those living near Seattle get these receipts, otherwise those from a distance will be deprived of the reduced rate.

PROVISIONAL PROGRAM

WEDNESDAY, 10 A. M.

1. Address of the President, Clinton T. Cooke, Seattle, Wash.
2. Selero-Corneal Trephining in the Operative Treatment of Glaucoma, Col. Robert H. Elliot, London.

WEDNESDAY, 2 P. M.

3. Demonstration of a Case that was Operated Upon by the Elliot Method, Norman H. Goodenow, Everett, Wash.
4. Extraction of Senile Cataract and After Treatment, A. K. Higgs, Portland, Ore.
5. Subject to Be Announced, Vard H. Hulen, San Francisco, Cal.
6. Tonsillectomy Technique, Robert L. Nourse, Boise, Ida.

THURSDAY, 10 A. M.

Col. Elliot will hold a clinic at one of the local hospitals. Place to be announced later.

THURSDAY, 2 P. M.

7. Demonstration of Specimens, Photographs and New Instruments.
8. Cerebellar Syndrome, W. F. Schaller, San Francisco, Cal.
9. The Relation of Special Sense Functions to Intracranial Growths, Wm. House, Portland, Ore.
10. Surgical Treatment of the Lateral Sinus with Report of Five Cases, A. T. Wanamaker, Seattle, Wash.
11. Report of Two Cases of Gunshot Wound of the Ear with Cerebellar abscess, Cullen F. Welty, San Francisco, Cal.
12. A Method of Enlarging the Fronto-Nasal Duct and Opening the Agger-Nasi Cell, Nevin D. Pontius, Seattle, Wash.
13. Purulent Meningitis Following Penetration of the Eyeball by a Fishhook, C. A. Veasey, Spokane, Wash.

FRIDAY, 10 A. M.

14. Eye Changes in Diabetes, Emil Schmoll, San Francisco, Cal.
15. Anomalies of Accommodation and Their Practical Significance, Joseph L. McCool, Portland, Ore.
16. Ultra-Violet Rays and Some of Their Effects, Frederick Osborn, Seattle, Wash.
17. Trachoma an Infection of the Blood and Eyelids by Protoplasmic Microorganisms. Additional Observations and Additional Bibliography (Continuation of Series of 1908-1910), F. B. Eaton, Portland, Ore.

FRIDAY, 2 P. M.

18. What Everybody Should Know About the Ear, Nose and Throat. A series of Illustrations and Legends Compiled for a Child's Welfare Exhibit. Illustrated by Lantern Slides, Edward E. Maxey, Boise, Ida.
19. Interlacing Color Fields in Ocular Lues. Illustrated by Lantern Slides, Hayward G. Thomas, Oakland, Cal.
20. Evolution of the Eye (With Lantern Slides), Trevor Kincaid, Seattle, Wash.
21. Relation of Dental Arches to Nasal Insufficiency, Wm. Cavanagh, Portland, Ore.
22. Hysterical Manifestations in Relation to the Ear, Nose and Throat, Copeland Plummer, Seattle, Wash.

MEDICAL NOTES

OREGON.

Member of Examining Board. Dr. Thomas Higgins, of Baker, has been appointed by the governor to take the position on the State Medical Examining Board vacated by Dr. C. J. Smith.

Fire in Hospital. Fire in the Rose City Maternity Hospital caused damage amounting to about $1,000. The patients, all of whom were in the first floor at the time of the blaze, were removed to places of safety with great promptness and without serious inconvenience.

Prosecution of Illegal Practitioners. The State Board of Medical Examiners is still actively engaged in the prosecution of illegal practitioners, four of these offenders having been excluded from practice at the meeting of the board on May 9.

New Railroad Hospital. The O. W. R. & N. Company has announced that it will erect a railroad hospital at La Grande to cost $10,000.

Dr. Dan Clark, of Harrisburg, who was operated on for appendicitis, has entirely recovered and returned to his work.

Dr. E. H. Anthony, government jail physician of Portland, has resigned to take postgraduate work. Dr. J. F. Wood has been appointed to fill the position.

Dr. Milo Kirkpatrick, of Portland, has returned from Europe, where he spent five months in travel and study.

Dr. H. Y. Spence, formerly connected with the National Railroads of Mexico, has located in Eugene.

Dr. J. H. Fell, who received a fracture of the right femur in an automobile accident, is recovering.

Dr. C. W. Tidball, who has finished his term at the Good Samaritan Hospital; has located at Grays Crossing, Portland.

Medical Wedding. Dr. A. A. Soule and Miss Eva Melhase were married in the latter part of April. They will reside at Fort Klamath.

WASHINGTON.

New Hospital at Tacoma. The corner stone of the new St. Josephs Hospital of Tacoma was laid April 19 by Bishop E. J. O'Dea. It will be a thoroughly modern structure costing $500,000 and will not be completed before 1915.

New Health Officials. The change in city administration of Tacoma has resulted in the resignation of Dr. E. W. James and Dr. C. H. Wilson respectively health officer and bacteriologist. Mayor Fawcett has appointed Drs. A. H. Wall and Kathleen Anderson to fill these positions.

Physician Decorated. Dr. G. F. Warmburg, of Seattle, has received the emblem of membership in the Order of the Red Eagle. This order was bestowed upon him by the German Emperor through the local German consul as a reward for meritorious services performed for Germany.

First Aid for the Police. Following an order of Chief of Police Griffiths, the Seattle police force will receive instruction in first aid to the injured. A number of officers have already voluntarily taken such a course and the new order is being favorably received. The course will be given by various local physicians, who will serve without compensation.

A Camp for Medical Officers. Medical officers for the militia of Oregon, Washington and Idaho will go into camp at Vancouver barracks in the early part of June. The camp and field hospital will be in charge of Major J. B. Clayton.

Smallpox at Hoquiam. The epidemic of smallpox at Hoquiam has been investigated by Dr. E. R. Kelley, State Commissioner of Health. He finds that the epidemic was caused by the failure of parents to report the earlier cases. Neither the City Health officer nor the Board of Education had given the cases the investigation which they should.

The Seattle Obstetrical and Gynecological Society held its regular meeting May 20, having been postponed from May 13. The evening was devoted to a consideration of the indications for abdominal cesarian section and vaginal cesarian section. Dr. Lazelle opening the discussion.

Bainbridge Island Sanatorium. This institution is established at Seabold, 15 miles from Seattle, under the direction of Dr. J. M. Henderson. It is especially intended as a house for convalescents and is prepared to care for all such patients, beside receiving patients with any non-contagious disease.

Narrow Escape. Dr. S. Linton, of Vashon Island, had a narrow escape from death when his buggy backed over the edge of a bluff near Quartermaster Harbor. He fell into a clump of saplings near the foot of the cliff and the injuries. while painful, are not serious.

Hospital Fire. St. Mary's Hospital, in Ellensburg, was damaged to the extent of $500 by fire a few weeks ago.

Dr. M. E. Bennett has been appointed health officer of Wilbur, following the resignation of Dr. J. T. Edward.

Dr. J. S. Judah, of Leavenworth, has leased a large residence which he will convert into a private hospital.

Dr. V. C. Cleveland, of Winona, has located in St. John.

Dr. S. G. Olmsted, formerly of Seattle, has located in Stanwood.

Dr. C. H. Orr, of Burlington, has left for southwestern Missouri, where will locate.

Medical Wedding. Dr. Carl E. Loenig and Miss Esther McCorkle were married recently in Tacoma. They will reside in Forks.

OBITUARIES.

Dr. Louis H. Redon died at Seattle, Wash., May 11 from internal injuries due to broken ribs caused by being run over by an automobile. The exact circumstances of his death have not been ascertained but it is believed that, while passing through an alley to the garage at night, he was knocked down and run over by an automobile entering the alley. He was unable later to give an account of the injury. He was born at Victoria, B. C., in 1876. He graduated from Stanford University in 1897 and from the medical department of McGill University in 1901. After spending a year in European study he located in Seattle in 1902, making a specialty of diseases of the skin. He was a man of very happy disposition and pleasing personality that made him a friend to all who knew him. He was active in matters pertaining to the medical profession, serving in various capacities in the medical societies. He was generally considered as one of the most useful members of the profession. He is universally mourned by the members of the medical profession as well as many other acquaintances in Seattle and other parts of the state.

Dr. James H. Neagle died in Seattle May 8. He was seventy years of age and was born in Mecklenburg, North Carolina. During the Civil War he served as a confederate soldier. Later he studied medicine, beginning practice in 1876. He lived in Seattle for over twenty years, although he was not actively engaged in practice for many years previous to his death.

Dr. Marietta Hughes died at Spokane, Wash., May 17 from pneumonia. She was seventy years of age and had practised in Spokane for more than thirty years. Her husband was also a physician. At one time they practised together at Wallace, Idaho. A son is also a physician at Grangeville.

Dr. E. Y. Munsell died at Portland, Ore., April 28, after an illness of six months. He was seventy-five years of age and had been a resident of Portland for twenty-one years, coming there from Wichita, Kan.

REPORTS OF SOCIETY MEETINGS

OREGON.

SOUTHERN OREGON MEDICAL SOCIETY.

Pres., Jesse P. Truax, M. D.; Secty., J. J. Emmens, M. D.

The twenty-third annual meeting of the Southern Oregon Medical Society was held at Medford, Ore., May 12, 1914.

The following program was presented.

11 a. m.

Call to order by the President, Dr. Jesse P. Truax.

Business session, including election of officers.

Address by outgoing President—"The Value of the State Resulting From the Control of Child Hygiene." Dr. Jesse P. Truax, Grants Pass.

12:30 p. m.

Luncheon.

1:30 p. m.

"The Present Status of Syphilis of the Nervous System With Special Reference to Treatment." Dr. William House, Portland.

"Alimentary Anemia of Childhood." Dr. F. D. Stucker, Grants Pass.

"Surgical vs. Medical Treatment of Goitre." Dr. Andrew C. Smith, Portland.

"The Value of Differential Leucocyte Count in the Diagnosis and Prognosis of Acute Appendicitis." Dr. E. H. Porter, Medford.

"Rabies." Dr. Calvin S. White, Portland.

General discussion and presentation of cases.

5:30 p. m.

Auto ride through the Rogue River valley.

7:30 p. m.

Banquet, Hotel Medford.

WASHINGTON.

KING COUNTY MEDICAL SOCIETY.

Pres., D. H. Palmer, M. D.; Secy., G. W. Swift, M. D.

The regular semi-monthly meeting of the King County Medical Society was held in the Chamber of Commerce, Seattle, Wash., May 4, 1914. Meeting was called to order by the President, Dr. Don H. Palmer, 92 members being present. The minutes of the previous meeting were read and approved.

PAPERS.

Fischer's Treatment of Nephritis. By E. P. Fick.

Discussion by Fred Parker, P. L. West, E. B. Burwell, F. L. Horsfall.

Diseases of the Pituitary Body. By C. A. Smith.

Discussion by Maud Parker, H. V. Wurdemann.

CASE REPORT.

Amebic Dysentery Cured by Emetine Treatment. By E. L. Bickford.

Discussion by H. J. Davidson and A. O. Loe.

W. O. Cutliffe was unanimously elected to membership in the society.

A report of the Board of Trustees was read relative to a plan for a clinic day for the county society. On motion of E. P. Fick, seconded by H. D. Dudley, the report was adopted.

The report of the committee appointed to investigate the County Hospital was read by H. D. Dudley. On motion of J. H. Snively, seconded by Maud Parker, the report was adopted.

There being no further business the meeting adjourned.

The second regular semi-monthly meeting of the society was held Monday evening, May 18. Meeting was called to order by the Vice-President, Dr. F. T. Maxson. About 45 members were present. Minutes of the previous meeting were read and approved.

The following resolutions were presented by E. Weldon Young:

Whereas, The Supreme Physician has called from his earthly labors our beloved friend and colleague, Dr. Louis H. Redon: and,

Whereas, Dr. Redon, in his public, professional and private life, reflected those qualities of heart, mind and professional attainment that should characterize the honorable physician; and,

Whereas, We feel that in our colleague's death the medical profession of the entire Pacific Coast has lost one of its most distinguished members, this society an officer and member whose time and talents were ever given generously and efficiently to all that pertained to its work and progress; while we as individuals realize that by his death we have experienced the personal loss that only follows the passing of one whose hand-clasp was warm, whose greeting was cordial and whose friendship was sincere; therefore, be it unanimously

Resolved, That we, the officers and members of the King County Medical Society, extend to Dr. Redon's family these sincere expressions of our regard and of our sorrow; and be it further

Resolved, That copies of these resolutions be forwarded his family, spread upon the records of this society and furnished the Seattle daily papers for publication.

Moved and seconded that these resolutions be adopted by a standing vote. They were unanimously adopted.

Dr. P. W. Willis delivered a short address touching upon the work of Dr. Redon in the county society. He spoke of him in his capacity as secretary, trustee and vice-president; of his untiring efforts to serve in any capacity in which he was called upon to serve; of his promptness in all things; of his smile, his kindness, his ideals.

In the absence of Drs. Lyons and Burns, the President called upon Dr. C. A. Smith, who spoke of Dr. Redon's kindly disposition and his good will toward all.

Dr. Maxson spoke briefly, paying tribute to his memory.

Dr. Horsfall made a short address, speaking of having been in college with Dr. Redon, and of the same charming character that drew him to the hearts of his college mates.

The meeting adjourned after these addresses, no business being discussed.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Modern Medicine. Its Theory and Practice. In original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England, etc., and Thomas McCrae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia, etc. In five octavo volumes of about 1000 pages each, illustrated. Volume II. Just Ready. Price per volume, cloth, $5.00, net; half morocco, $7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

In the first part of this standard work we find, under protozoan infections, amebic dysentery, malaria, blackwater fever, trypanosomiasis, relapsing fever and syphilis. The use of emetine in amebic dysentery is urged and also quinine injections, but recent experience in this country, notably at Rochester, shows that rectal injections of one quart of kerosene on alternate days has the most successful effect. In one case of several years standing one treatment appeared to cure the patient. Sir Osler writes the section on syphilis with the co-operation of Dr. Churchman. The injection of five doses of neosalvarsan at five to seven day intervals, followed by intramuscular mercury injections, they regard as the ideal treatment in early cases. There is a judicious and very interesting discussion of autointoxications by Alonzo Taylor. He emphasizes the fact that the amount of indican in the urine is no measure of autointoxication, although it is commonly considered the only practical test for diagnosis of the condition. He shows that a high output of aromatic substances (indican) indicates active putrefaction in the colon, which may be innocuous or harmful, while a low output does not speak against a bacterial, intestinal intoxication. The assumption has been that other substances which are poisons are produced by putrefaction and, that as the degree of putrefaction is measured by indican, so will be the degree of the hypothetical poisoning. This is affirmed to be wholly false reasoning and that there is no clinical parallelism between symptoms and the results of the indican test in degree, onset or disappearance. This statement bears out that expressed by Cabot that he had never seen enough benefit derived from the indican test to make it worth while to do it. One can not review a work of this kind. It is the most valuable system of medicine in English and the authors are all authorities, which is not by any means always the case. The editors are to be congratulated upon actually reducing the size of the system in its new revision. The work should be in the hands of every physician even if the time since the purchase of the last edition does not seem so long as it should. Time (and money) flies. **Winslow.**

A Manual of Infantile Paralysis with Modern Methods of Treatment. By Henry W. Frauenthal, A. C., M. D., Surgeon and Physician-in-Chief, New York Hospital for Deformities and Joint Diseases, and Jacolyn V. Manning, M. D., Epidemiologist, Wisconsin, 1908, Epidemic Acute Poliomyelitis. More than 100 Engravings, 374 pp. Price, $3, net. F. A. Davis Co., Philadelphia, Pa., 1914.

The abundance of material on infantile paralysis which has appeared within the last five years, in monograph form, as society reports, reports of State Boards of Health, of investigating committees. Government reports and innumerable independent articles, make a most formidable array of material to wade through for the student of this subject. The authors here have boiled down the essential facts into one easily handled volume. While there is still much to be learned about this condition, our present knowledge is well summed up in this book. Moreover, this is more than an epidemiologic study of the disease; it is made practical by an equal section on therapy, based upon a daily attendance of 100 to 150 at the Infantile Paralysis Department of the Hospital for Deformities and Joint Diseases, of New York. The chapters on therapy consider treatment during the early stage, hydrotherapy, electrotherapy, massage, passive motion, mirror exercise, mechanotherapy and surgical treatment. While issue could be taken with some of the details of treatment in a subject which like this is made up of detailed treatment, it must be remembered the authors, one as an epidemiologist, the other as a clinician, have had wide experience in the observation and study of this disease and have placed it before us in as true a light as can probably be done at the present time. **Manning.**

A Manual of Clinical Diagnosis by Means of Laboratory Methods. For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, M. D., Professor of Clinical Pathology and Experimental Medicine in the College of Physicians and Surgeons, Baltimore. Eighth edition, enlarged and thoroughly revised. Octavo, 809 pages, with 185 engravings and 25 plates. Cloth, $5.00 net. Lea & Febiger, Philadelphia & New York, 1914.

The eighth edition of this work is brought up to the moment. In it will be found the latest knowledge of the Abderhalden test, latest technic of the Wassermann, complement fixation for latent gonococcus infections, the more modern methods of investigating the existence and extent of renal disease. The book has an added feature which, in our opinion, places it far above any other like work. This lies in the second section, which is devoted to the application of laboratory findings to separate and individual diseases.

For example, the heading **Syphilis** is immediately followed by essential factors, including secondary anemia, positive reaction with Justus' blood test, lymphocytosis, positive Wassermann reaction, demonstration of spirocheta pallida, positive butyric acid reaction (Noguchi) in the cerebrospinal fluid, positive Wassermann reaction in the cerebrospinal fluid, cerebrospinal lymphocytosis.

Here we have, freed from all surplus verbiage, the possible laboratory findings in a case of syphilis. On presenting such a case for examination the practitioner may, at a glance, see what examinations to demand of his laboratory worker or the latter may, when the occasion demands, at once refresh his memory. This portion of the book, in our opinion, places the work far above any other like volume at present published, since we have seen no other possessing this feature and because its practicability enters into the every-day work of both practitioner and laboratory worker. **West.**

The Pathogenesis of Salvarsan Fatalities. By Sanitäts-Rat. Dr. Wilhelm Wechselmann, Directing Physician of the Dermatological Department, Rudolph Virchow Hospital in Berlin. Authorized Translation by Clarence Martin, M. D., First Lieut. M. R. C., U. S. Army. 143 pages. Price $1.50. The Fleming-Smith Co., St. Louis, Mo., 1913.

The text deals largely with a review of the toxic effects upon the kidneys and central nervous system, following the use of mercury, arsenical preparations and other poisonous substances, with discussions and conclusions deduced therefrom. Attention is called to a list of published fatalities following the use of salvarsan with known or previously unknown organic lesions, confirmed or discovered at autopsy, including illnesses in which it is not possible to charge salvarsan with being the cause of death. The author objects to the explanation of hypersensitiveness, toxicologic and cumulative action as alone explaining these fatalities but rather offers the theory of some organic insufficiency, especially of the kidneys. He states: "My entire experience with more than 25,000 injections forces me to the inevitable conclusion that salvarsan is much less toxic than mercury." The work is of practical value to all using salvarsan in the lessons taught by a careful study of the fatal cases, and should be a warning of the dangerous, death-producing possibilities when carelessly or inappropriately administered. For safety the following precautions are recommended: (1) The most exact technic, (2) A dose of the drug carefully adapted to the individual case, (3) Careful observation of the urinary secretion when employing salvarsan, (4) The conjoint use of salvarsan with heavy mercurial treatment is dangerous, (5) Take into careful consideration every general reaction or rise of temperature and make a full investigation of the causes of such effects. DUDLEY.

Surgery; Its Principles and Practice. For Students and Practitioners. By Astley Paston Cooper Ashhurst, A. B., M. D., F. A. C. S., Instructor in Surgery in the University of Pennsylvania, etc. Handsome large octavo, 1141 pages, with 7 colored plates and 1032 illustrations, mostly original, in the text. Cloth, $6.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book deals with the fundamental principles of surgery and is written primarily to meet the needs of the student. The author has apparently kept this ideal constantly in view, pathology and diagnosis being discussed with great clearness and detail. The discussion of technic is limited to the principles involved, a method that might be followed with advantage by many. Throughout the book the reader can discern the influence of that great surgeon of the last generation, John Ashhurst. The first portion considers general surgical diseases, pathologic processes and the effects of trauma. The second portion is devoted to a discussion of the surgery of the different structures and regions of the body. The chapter devoted to fractures and diseases of bones is to be particularly commended. All descriptions of disease processes and points of diagnostic importance are clear and concise. Throughout the book is very readable and the illustrations, most of which are original, enhance the value of the text. JONES.

Dorland's American Illustrated Medical Dictionary. Seventh Revised Edition. Edited by W. A. Newman Dorland, M. D. Large Octavo of 1107 pages, with 331 illustrations, 119 in colors. Containing over 5,000 more terms than the previous edition. Flexible Leather, $4.50 net; thumb indexed, $5.00 net. Philadelphia and London: W. B. Saunders Company, 1913.

In the seventh edition of the present volume there has been such a large addition because of the great increase of medical terms from the results of progress in the fields of serology, physiology, pathologic chemistry and experimental medicine. The eponymic terms have likewise increased in the same proportions and the proper names which are applied to symptoms of disease, methods of treatment and surgical operations should be a delight, at least to their originators, if the despair of students. They may be found cross-indexed under the headings of operations, symptoms and signs. Both the derivation, and phonetic spelling, as an aid to pronunciation, are to be found in connection with each word. Dorland's dictionary is both a standard book and one of the most authoritative and convenient works on the subject in English, as its popularity and wonderful success attest.

WINSLOW.

Ophthalmic Surgery. By Charles Beard, M. D., Surgeon to the Illinois Charitable Eye and Ear Infirmary, etc. Second Edition, Revised and Enlarged. 745 pp., with 9 Plates and 374 Illustrations. Price, $5, net. P. Blakiston's Son & Co., Philadelphia, 1914.

Each chapter of this second edition has been reviewed, parts added, new operations described and their value pointed out in a clear manner. Each anatomic structure is briefly described; a brief history of the operative measures commonly associated with these structures is given. The indications for and against operation and the choice of operation are important features of each chapter. All instruments of accepted value in ophthalmic surgery are described and illustrated, in many cases the history of these instruments being an interesting addition. The subjects of glaucoma and retinal detachment are exceptionally well handled with all operations described for the relief of these conditions. The entire volume is up to date in every way, a credit both to the author and ophthalmology.

SWIFT.

Osler's Essays. By William Osler. Vol. I., Man's Redemption of Man, 63 pages, 50c, net. Vol. II., A Way of Life, 61 pages, 50c, net. Paul B. Hoeber, Publisher, 69 E. 59th St., New York.

These two booklets by Osler are lay sermons recently delivered. They may be read each in about half an hour and are delightful for gifts. "A Way of Life" has a splendid philosophy running through it, which seems to center about the paragraph of Carlyle, "Our main business is not to see what lies dimly at a distance, but to do what lies clearly at hand." Osler ran across this sentence back in '71 and says it has been a beacon light to him ever since. Character is long-standing habit and each physician taking advantage of this great truth may be spared the annoyances and loss of time incident to the usual aimless way of going at things. Osler believes his success in life has been due to routine and that just ordinary men may become great through acquiring this blessing. "Man's Redemption of Man" is very largely an orthodox talk, the result of early training and at times quite spiritual, but through it and between the lines may be read the names of Darwin, Spencer, Walt Whitman and other men of the new religion. Both these booklets are splendid reading and again demonstrate the broad culture, refinement and philosophy of this truly wonderful man.

FICK.

A History of Laryngology and Rhinology. By Jonathan Wright, M. D., Director of the Department of Laboratories, New York Post-Graduate Medical School and Hospital. Second Edition, Revised and Enlarged. Octavo, 357 pages, illustrated. Cloth, $4.00, net. Lea & Febiger, Philadelphia and New York 1914.

Our medical schools do not give courses in the history of medicine; therefore, we are too apt to think that procedures in medicine and surgery of today are of recent origin. Not only every specialist of nose and throat diseases but every practitioner should read a treatise such as is contained in this book, which takes up the history of nose and throat troubles from early times before Christ to the present date. The author also discusses some of the important subjects in this branch of medicine of today, such as the tonsil question. The book is comprehensive and the style interesting. WANAMAKER.

The International Medical Annual. Cloth, 716 pages. Thirty-second year, 1914. Price $3.50. E. B. Treat & Co., New York City.

This is the most concise year-book of medical progress in all parts of the world published in English. No starting innovation has occured in therapeutic progress. Salvarsan is not so popular and mercury is more popular than a year ago, while vaccines are not held of so much value as in the recent past. Camphor is found valueless, according to recent experiments recorded herein, but the leading surgeons find it of more value in emergencies as a general stimulant to the vital centers than any other single agent. A work of this kind so familiar to the profession is impossible to review, as it is itself a review and there is no other which contains so much in so small a space, for so small a sum and withal excellently done. WINSLOW.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume III, No. 1. Octavo of 190 pages, 91 illustrations. Published Bi-Monthly; price per year: Paper, $8.00; Cloth, $12. W. B. Saunders Company, Philadelphia and London, 1914.

This number is up to the standard of preceding issues. Clinics on bone and joint conditions predominate and the complete technic for arthroplasty of hip and knee joints is described. In connection with his discussion of acute metastatic arthritis Dr. Murphy goes at some length into the subject of metastatic infections in general and this is probably the most valuable part of the book. Mr. Herbert Paterson, of London, has discussed the subject of gastric cancer and ulcer from a new standpoint and his remarks are convincing. FORBES.

A Handbook for the Post-Mortem Room. By Alexander G. Gibson, D. M., (Oxon.) F. R. C. P., (London), University Demonstrator in Pathology, Oxford, etc., pp. 140. Price, $1.50. Oxford University Press, London and New York, 1914.

This small compact work should serve a more than useful purpose. It is primarily intended for the busy practitioner, the nature of whose calling forces him to perform an occasional post-mortem. While it is very brief, it goes as much into detail as could possibly be required by all but the most advanced students along this particular line. The descriptions are clear, concise and readable. The few illustrations, while mainly schematic, are good and well chosen. The text is clear and the typographic work and binding most excellent. Considered from every standpoint it is the boiled-down essentials necessary for the condition of a post mortem examination in an intelligent manner. It is a useful addition to any library. SHAW.

Obstetrics for Nurses. By Joseph B. DeLee, M. D., Professor of Obstetrics in the Northwestern Medical School, Chicago. New (4th) edition. 12 mo of 508 pages, fully illustrated. Cloth. $2.50 net. Philadelphia and London: W. B. Saunders Company, 1913.

Probably there is no subject in the range of medicine in which the nurse is a more important figure than obstetrics. For this reason a work of the excellence of DeLee's has unusual importance. He states that there are at least 6,000 deaths today from puerperal sepis in the United States and chiefly in private practice. The volume is almost a textbook on obstetrics and the author states in the preface that it should be of value to medical students. The descriptions of operations are especially graphic, with plans showing the proper arrangements of all the paraphernalia in the operation room and lists of all necessary instruments and articles. The book also describes the care and feeding of infants and district nursing. We have already reviewed the work in NORTHWEST MEDICINE and, as it is the standard book for nurses, it would be supererogation to go into more description. Several new subjects have been added and also many illustrations. The reproduction of many quaint and classic cuts adds much to the attractiveness of the book. WINSLOW.

Principles of Hygiene. For Students, Physicians and Health Officers. By D. H. Bergey, M. D., First Assistant Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fourth edition, thoroughly revised. Octavo of 29 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, $3.00.

Note of the marked advancement in the knowledge of water and sewage purification has knowledge of water and sewage purification has been made similarly the great advances in the methods of prevention of disease, especially in typhoid fever and dysentery. This volume has been prepared to meet the needs of students of medicine in the acquirement of a knowledge of those principles on which modern hygenic practices are based; to aid students in architecture in comprehending the sanitary requirements in ventilation, heating, water-supply, and sewage disposal; and to aid physicians and health officers in familiarizing themselves with the advances made in hygenic practices in recent years.

NORTHWEST MEDICINE

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ORIGINAL CONTRIBUTIONS

THE PREVALENCE OF GOITRE IN THE NORTHWEST, BASED ON THE EXAMINATION OF 3339 STUDENTS ENTERING THE UNIVERSITY OF WASHINGTON.*

By D. C. Hall, Sc. M., M. D.
SEATTLE, WASH.

Every student entering the University of Washington for the first time is required to undergo a physical examination. Any deviation from the normal is noted and the student advised accordingly. This has given us a good opportunity to gather statistics upon some interesting, if not important conditions. The examination of the men students were made by myself, with the aid of an assistant, while the women were examined by the women instructors in the department of physical education, who are not physicians, yet who are very well trained in the detection of topographic abnormalities in an empirical way. This examination is helped out by a rather full history card, made out by the student herself.

In examining the neck close scrutiny was made for enlargements of the thyroid gland. These were divided into three classes, viz., perceptible, medium and large, and recorded as goitres. The large goitre is one that is readily noticeable. The medium is one that is apparent when the neck is bared. The patient is conscious of it and usually has taken treatment for its reduction. The perceptible goitre is one that gives a slight fullness to the neck and may be classified only by further inspection and palpation.

In detecting this condition the patient is asked to elevate the chin and swallow. First, by inspection it is noted whether or not there is any enlargement that follows the course of the larynx, and then by palpation, with the finger or thumb first over the isthmus and then the latter lobes, while the attempt at deglution is carried out. Any enlargement thus noted is classed as perceptible. Very often in these cases the patient is aware of the enlargement and has reduced it by treatment. If there be any doubt as to its classification, the patient is asked to blow quite hard to full expiration in the spiromoter. This procedure invariably engorges the gland to an appreciable extent if it be enlarged, while no change is noticeable if it be normal. We have tried to be very conservative in this condition and classed as normal all that did not show an unmistakable enlargement by inspection only.

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*Read before King County Medical Society, Seattle, Wash., Jan. 18, 1914.

This series consists of 2086 men with the average age of 20 years and 5 months and covers a period of five years, and 1253 women with the average age of 19 years and 3 months and covering a period of three years. Of the 2086 men 374 were affected as follows:

272	classed as perceptible,	or	13.03 per cent.
92	classed as medium,	or	4.43 per cent.
10	classed as large,	or	.48 per cent.
374	total affected,	or	17.94 per cent.

Of the 1253 women, 388 were affected as follows:

294	classed as perceptible,	or	23.45 per cent.
85	classed as medium,	or	6.79 per cent.
9	classed as large,	or	.7 per cent.
388	total affected,	or	30.94 per cent.

Of the nineteen classed as large, four had a marked exophthalmus, one man and three women. They were strikingly of the plethoric type, large, full-blooded and verging on the obese. But one, a girl, showed signs of a toxemia, and that only upon exertion or especially during excitement, at which time tachycardia, sweating and tremor became apparent. The exophthalmus was such in two other cases, one man and one woman, that complete closure of the eyelids was impossible.

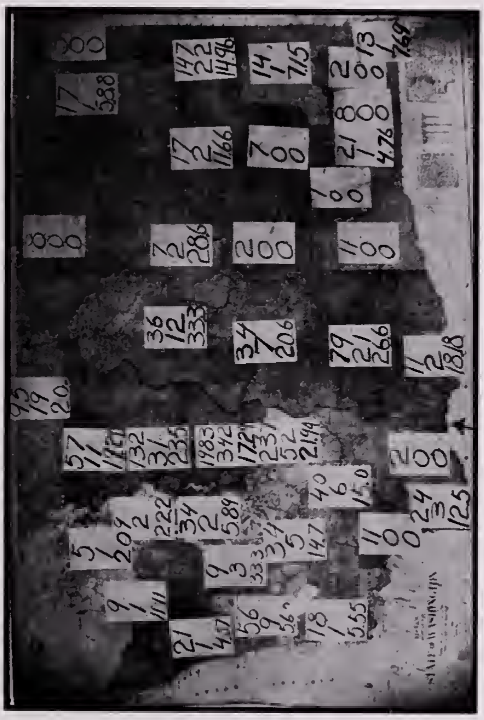
The enlarged gland was symmetrical, as a rule, but when asymmetrical the enlargement was always on the right side. We did not pay very close attention to this until there appeared three cases in rapid succession, in which the enlargement was on the right side. Since then careful observation was made of the examinations of 582 men, of whom 96 had either a medium of perceptible enlargement. Of this number, nine, or 9.4 per cent., were on the right side.

It was attempted to determine the incident of heredity, but this was found to be unreliable, as a healthy student was not so liable to give as accurate an answer to a question concerning the appearance of his parents as would a sick patient. In a series of 343 women of whom 83 were affected, ten, or 2.9 per cent., gave a history of the malady in the family. The direct hereditary quality here is not such that much credence can be paid to it. When attention was called to the enlarged throat, it was the common attitude of the student to make light of the condition and attempt to pass it off by saying, "Oh, it used to be larger, the doctor gave me some iodine and it went right down." Probably one-half had received no treatment at all. We did not make a record of this very important feature.

In going over literature for statistics covering the same field I was unable to find any that could be used for comparison. During a period of six years at the University of Oklahoma, where approximately one thousand students were examined, goitre was found to be very rare. These observations have been carried out by my successor, Dr. Darling, who has kept records covering the past five years. His findings are approximately 1 per cent. It was the striking difference in regard to goitre between the students of the prairie country of Oklahoma from the students of Washington that suggested the compilation of these statistics.

Oklahoma is a level, rolling prairie. Snow is unknown, excepting an occasional slight flurry of a few hours' duration. The water supply is mainly from deep wells, free from organic constituents and highly inorganic. In fact, the water is actively cathartic, until a tolerance is acquired for it. In Washington we have a unique condition. The state is divided from north to south through its middle and western thirds by a mountainous range perpetually snow-capped and with glaciers on the higher peaks. The peaks average very close to eight thousand feet altitude. Vegetation averages to about seven thousand feet and cultivation seldom grows above two thousand five hundred feet. West of the Cascades the temperature is fairly uniform, seldom going 35° above zero, or rising above 85°. In Eastern Washington the winters are cold, often going considerably below zero, with much snow, and in summer over 105° in the shade is not unusual. The land is level, rolling prairie, until the northern and eastern portion is reached, where it again begins to rise to the watersheds of the Selkirk range in British Columbia and the Idaho ranges. In other words, we have the mountainous and prairie conditions side by side.

The statistics so far cannot be considered to be very valuable, on account of the limited number examined, and will only be valuable when they reach an average of one thousand from each county. The chart, however, may be considered as an interesting index that may point the way to extended investigation along this line. It shows goitre to be endemic along the slopes of the mountains, and comparatively free in the prairie country in the southeastern portion of the state. In this area there are nine counties, covering 82 examinations with only three cases, or a percentage of 3.6, while on the upland it averages 20 per cent. On the chart the crest of the mountains is shown by a red line. The figures in each county indicate at the top the number of students examined coming from that county, the middle figures the number affected and at the bottom the percentage. The findings agree in the main with other observers.



Map of Washington. Arrow indicates mountain divide. Top figure over each county indicates number of examinations; middle, the number of cases; lower, the percentage affected; lower right quadrant, volcanic ash, goitre-free area.

Major McCarrison, a British surgeon in the Indian service, has reported epoch-making researches, and reviewed the literature in his Milroy lectures before the Royal College of Physicians in London. He concludes that "the ideal conditions for the development of goitre are to be found in a country district with an agricultural population, having a porous soil, which soil contains much organic matter and, by virtue of its porosity and slope, admits of the ready passage of organic matter into the unprotected streams and wells. It is in mountainous countries where limestone rocks abound that these conditions are most frequently found in combination. Consequently goitre is peculiarly a disease of the hills." Our findings conform quite closely to the above with the exception of the amount of limestone. The slopes are made up of granites, gneiss, schist, slate, quartzite and a rather small amount of limestone. In all other respects there is a minute similarity.

Bircher, of the Swiss commission, tried to find a constant relationship between goitre and the geological formations and concludes that "Goitre occurs only upon marine deposits, and especially upon marine sediments of the paleozoic, triassic and tertiary periods, and that the eruptive rocks, the crystalline rocks of the Archaen groups, the sediments of the jurassic, cretaceous and post-tertiary seas, as well as all fresh water deposits, are free from the disease, that it occurs especially on rocks of the Silurian, Devonian, Carboniferous and Permian systems." Our findings in the geology of Washington confirms Bircher's opinion, only in part. It seems to be confined to the marine deposits of Washington, which generally cover all of the state, excepting the southeastern portion, where only 3 per cent. are affected. This southeastern portion is made up of volcanic ash and lava. It is of the mid-tertian period and the soil gives an alkaline reaction. The northeastern portion of this state is made up of quartzite, slate, limestone, basalt, andesite and a large amount of granite. This portion, with the Cascade range. is in the carboniferous jura-triassic and cretaceous periods. All of Western Washington belongs to the early tertiary period and consists of sandstone, shale, slate and a small amount of limestone. The Puget Sound basin is covered with glacial drift. The soil is made up of it and consists of sand and gravel, with a small amount of clay and limestone. McCarrison concludes that the disease shows a preference for certain soils but that it can, nevertheless, prevail on soils of any geological formation.

That goitre is infectious is generally understood. While the specific organism has not been isolated, yet it conforms to all the laws of bacteriology that may be invoked without its isolation. A few observers, especially Drs. Marine and Lenhart working on trout, Gaylor on fish, Bircher on rats, and McCarrison on man and goats, have proven in such a way what seems to be beyond a reasonable doubt, that the infectious material comes from the soil. Bircher's conclusions, quoted by McCarrison, are as follows: "Goitre can readily be produced in rats by the natural water of goitre-producing springs. The thyroid enlargement does not arise until after several months' subjection to the toxic substances contained in the water. These toxic substances are destroyed by heat. They are not removed by filtration. They are removed by centrifugalization. Hydrogen dioxyde renders the water harmless. Dialysis removes the goitre-producing substances from the water. Substances separated from the water by the membrane of the dialyzer are capable of producing the disease." Lenhart has rendered the water innocuous by adding small quantities of iodine.

McCarrison states, as a result of his experiments on man, that "thyroid enlargement can be produced experimentally in man within a few weeks by administration of the suspended matter separated by filtration from goitre-producing water. Thyroid enlargement cannot be produced when the suspended matter is boiled. The goitre produced in this way must almost certainly be due, not to the mineral, but to the living component of the suspended matter. While it cannot be said to be proven by these experiments that filtration through a Berkfield filter wholly deprives the water of its goitre-producing properties, water so treated does not appear to be capable of causing goitre in man within a period of fifty-five days." He further says that the living excitant of goitre exists in great abundance in the deposit at the bottom and sides of water channels, tanks, wells and other receptacles of goitre-producing water. Bircher agrees with McCarrison in the above findings. That the presence or absence of goitre in a given community is largely a matter of the ease or difficulty with which the drinking water can become polluted, and that the increase in the disease bears a relation to the increasing organic impurity of the water, and that the toxic agent is a living excitant and that it bears an intimate relationship to the soil, seem clear, according to the above findings.

From experiments by the same observer, it would seem that the habitat of the parasite in man is the alimentary canal. He readily produced the disease in goats by giving them water, polluted with fecal matter from goitrous individuals. This is further substantiated by the fact that incipient goitre readily succumbs to internal medication with thymol and iodine. Ratimoff, according to McCarrison, places these two drugs second only in germicidal powers to mercuric chloride and silver nitrate. Thus the specific action of iodine in these cases is due to its strong germicidal action in the bowel, rather than through its relationship to the iodine content of the thyroid gland. It is reasonable to believe, from the failure of investigators to find the parasite in the gland and that intestinal parasiticides favorably modify the disease, that goitre is produced by toxic substances absorbed from the alimentary canal.

The pathologic changes that take place in the gland, according to Marine and Lenhart and agreed to in part by McCarrison, are to be observed in the blood-vessels, the epithelium and the stroma of the organ. There is a marked increase in the blood-supply to the gland. The capillaries and larger vessels of the stroma are dilated and there is an increased secretion of colloid substance which is more liquid, thinner and takes the stains much more lightly than usual. There is an increase of varying degree in size of the cells lining the vesicles. The cells are cubical in mild cases, and high columnar in the severer degrees of hyperplasia. They are more closely packed, more highly granular and the nuclei stained more deeply than normal. Should the development be rapid, the lining of the vesicle may undergo folding and completely close the lumen. The enlargement varies but may be in proportion to the degree of hyperplasia. This stage they call the pre-clinical stage of goitre. If the toxemia persists there is a destruction of the parenchyma up to the type, the pathology of which is only too well known.

The term adolescent goitre is usually applied to an enlargement of the gland that becomes noticeable at puberty. The gland is intimately connected with the genital system. In some of the higher invertebrates, of which the sea scorpion and limulus are good examples, the thyroid or its homolog is a true sex gland, its tube emptying into the genital tract. The hyperemia during menstruation and the compensatory hypertrophy during pregnancy are very well known.

The enlargement noticeable at puberty C. H. Mayo refers to as the hyperemia of puberty. To classify these enlargements during puberty as functionally normal, I believe to be erroneous. If it were purely functional, it would be universal which is not the case. The gland may enlarge at this time to an unobservable extent in all but, when it becomes observable and subject to fluctuation, I believe it is due to a two-fold stimulus acting at the same time; first, from the intestinal toxemia and, second, from the genital system. Either one being absent, the other is not sufficient in itself to cause a noticeable enlargement. Women are affected more than men. This is reasonably explained by the more sensitive nervous system and periodic functioning of the genital system. A potent accompanying factor, however, may be a sluggish alimentary canal up to the degree of chronic constipation. In this condition any toxins generated by intestinal parasites would have time for perhaps complete absorption. It may be that the difference in sex involvement is proportionate to constipation. That some goitres continue to grow after puberty is well established, and that others disappear may be due to this same malady. Statistics on the relationship between goitre and obstipatio chronica of these cases that develop large goitres and come to operation perhaps would throw some light on this question.

Is goitre endemic in Washington? From these statistics I think it would be reasonable to conclude that it is. The endemicity, however, is of a very low grade. McCarrison found that where the infection was virulent, males and females were affected alike, and that where the ratio between the males and females was great the virulence was proportionate. The ratio of this series would indicate endemic foci on the mountainous slopes of rather low virulence. McCarrison, however, states that the correct criterion of the endemicity of goitre cannot be obtained by a mere reference to the numerical ratio of thyroid enlargements, but regard must be had to the virulence of the disease as manifest by the presence of cretinism, deaf-mutism and its other sequelae. A proper index, therefore, will include, first, the number of cretinous children, deaf mutes, and idiots; second, the number of susceptible new-comers who acquire the disease within a fixed time; third, the proportion of men and women affected; fourth, the size and character of individual goitres.

It will be noticed, by reference to the chart, that the Pierce County students are affected to the extent of 22 per cent. and King County students to the extent of 17¼ per cent. Tacoma, the chief city of Pierce, furnishes practically all the students from that county, while Seattle, the chief city of King, in which the university is located, furnishes practically all the students from that county. It is doubtful if new-comers to Seattle for the purpose of attending the university would have much influence upon the percentage, as all new students from outside the state were excluded.

The probable explanation of the higher percentage in Pierce is the water supply. Until about eighteen months ago they derived their water from bored wells. They were not artesian in character, but had quite a profuse flow, the water being pumped to pressure reservoirs. The water supply of King County is piped direct from a lake in the Cascade mountains, at an altitude of over fifteen hundred feet. The watershed of this lake is carefully patrolled and the water is of a very high standard of purity as far as contamination by human habitation is concerned.

The water, as it reaches Seattle, is quite clear but, following an occasional storm, the water will be rather cloudy with organic matter for a couple of days. This, at first thought, may seem trifling, but I believe that herein lies the contagium vivum of goitre, and that Seattle could be made goitre-free, as far as its inhabitants are concerned, by either boiling the water or rendering it innoxious by the addition of some form of iodine.

The so-called goitre of adolescence, when it reaches the perceptible stage, especially when it is noticed by the patient or members of the family, should be considered as belonging to the preclinical stage of Marine and Lenhart, and be given prophylactic treatment to keep it in this stage and from reaching the clinical stage and its probable sequelae.

In view of the above facts it would seem that goitre is essentially a preventable disease and must succumb to prophylactic measures. Prophylaxis will look toward the destruction of the infective microorganisms in the water by boiling or by the addition to it of iodine or thymol, in localities where goitre is endemic. At first thought this would seem impracticable but it may be possible, at least during stormy weather when the water becomes cloudy. Of far more importance, however, on account of the probability of its being carried out, is the administration of iodine internally. This, I believe, should be advocated in goitriferous localities as the most reasonable method of prevention. The administration of the syrup of hydriodic acid or the syrup of the iodine of iron for a few days every three or four months after the age of seven or eight years should be a contributing if not an absolute factor in eradicating this disease.

The University of Washington.

A DISCUSSION OF SOME OF THE PROBLEMS IN GASTRIC DIAGNOSIS.*

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The extensive literature on this subject bears testimony to the difficulty of differentiating gastric ulcer, carcinoma, and some of the less grave gastric and paragastric lesions. The frequency with which many surgeons deliberately laparotomize with admitted intent "to meet the indications after getting in," itself ridicules their ability to correctly diagnose certain intra-abdominal conditions, notably those of the stomach. While it may be admitted that no serious error of commission is made to "operate for gastric ulcer" and then remove a number of gallstones or a chronically inflamed appendix, there is, nevertheless, a crying need for greater accuracy in diagnosis; in the first place, and perhaps most important, to convince the layman that we know whereof we speak, and thereby make our diagnoses acceptable to him and, secondly, to put a stop to the practice of diagnosing ulcer and allowing the patient to choose some future convenient date for operation, when he is at the time suffering from operable carcinoma that may shortly become inoperable.

The sooner we get away from our textbook teachings on the subject, the sooner we shall learn to make a reasonably early and accurate diagnosis. Textbooks give us the classic picture of acute, florid, bleeding ulcer, a rare condition in the limited experience of the writer. It tells us of cachexia, palpable tumor and coffee ground vomit of carcinoma, all evidences of inoperability, and in practice pernicious dicta. The diagnosis so often made by the general practitioner, dyspepsia, is but the giving of a name to a condition, postprandial discomfort or pain, and leaves the patient where he was before seeing his physician.

Let us review the means that have been at our disposal in the past and are still uniformly studied in making a diagnosis.

The *history* of the illness sometimes so characteristic is to permit of immediate diagnosise, e. g., when hematemesis or vomiting of stagnant food is reported, is too often capable of various interpretations and still more often presents some atypical feature that confuses.

Simple *vomiting* may occur in the so-called neuroses, or be dependent upon other conditions, e. g., migraine, pulmonary tuberculosis, gastroptosis and less often brain tumors. Associated *pain* may be dependent upon the repeated retching and straining, which in themselves may lead to hematemesis and thus to further misinterpretation.

Epigastric tenderness, while of great value, cannot be attributed to the stomach offhand. Such tender areas may depend upon the tender colon of prolonged spastic constipation, upon ulcerative colitis, or the general peritoneal hypersensitiveness often encountered in women.

The palpation of a *small tumor* is to be accepted with great caution indeed. The sources of error are many. Muscular males with gastric distress are often the subjects of such error, in that an unduly prominent segment of the rectus muscle or a slight rigidity over a tender point are looked upon as "tumors" or "deep resistances." The difficulties encountered depend largely upon improper posture of the patient and perhaps more often the difficulty in getting him to practise diaphragmatic breathing, as well as our inability to palpate tumors high up under or near the costal arch, where abdominal relaxation helps but little in making the part accessible to the palpating hand. Nor are actual tumors always palpable. Small beginning carcinomata, especially of the medullary type, are easily overlooked, the scirrhus or infiltrating carcinoma being characterized by total absence of palpable tumor. Clairmont* reports having frequently palpated spastically contracted portions of the stomach. Sometimes tumors that have escaped palpation may be seen, if careful inspection be practised with the light so placed as to accentuate shadows on the abdominal surface.

Gaseous distension of the stomach and palpation or percussion at such time are usually crude, though at times valuable, aids to diagnosis. The production of pain by an ordinary Seidlitz powder, or pain followed by vomiting has very frequently in our experience been followed by finding sufficient other evidence to substantiate the diagnosis of gastric ulcer or high-grade gastroptosis. On the other hand, it often serves to conceal a mass in the posterior wall of the stomach. One method of diagnostic palpation almost always overlooked is that of asking the patient to stand after distending the stomach, then palpating and percussing in this position and comparing the findings with those of dorsal decubitus. Gaseous distension serves largely to force the lesser curvature downward and forward, exposing it to palpation, where it had been previously hidden under the costal arch or edge of the liver. At the time of full distension, visible peristalsis or reversed peristalsis may be noted and proper consideration given such findings. In the absence of palpable tumor, one must still guard against too positive a conclusion against its presence. Errors of this kind are too often made and too serious not to teach the value of conservatism.

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*Read before Spokane County Medical Society, Spokane, Wash., Nov. 13, 1913.

*Die Bedeutung der Magenradiologie f. d. Chirurgie. Dissertation, Clairmont & Haudek, Jena, 1911.

The *test breakfast* has been a source of great disappointment to most gastroenterologists. Anacidity may occur in old chronic ulcer, in nervous achylia, achylia gastrica atrophica, as well as in carcinoma, whether of the stomach or elsewhere. Quite normal findings are compatible with both ulcer and carcinoma. Hyperacidity, while rather suggestive of ulcer, may occur in any condition causing intra-abdominal pain, from gallstones or appendicitis to renal colic or spastic constipation. To depend too faithfully upon this finding is to court grave and frequent error.

The study of *gastric flora* has been another disappointment. Long Gram-postive bacilli may occur in any form of organic gastric disease. Just how many shall be considered pathognomonic of gastric carcinoma remains yet to be shown. Finding the same as the dominant fecal organism means simply an anacid stomach, plus a suitable culture medium, which, according to a few investigators, must contain blood. Lactic acid is difficult of detection and when present is indicative only of fermentation in an anacid stomach, therefore, not of pathognomonic importance. While sarcinae are pretty generally accepted as suggestive of ulcer stasis, it so happens that we have not seen a single instance of their presence in the past year, during which some 60 or 70 test breakfasts have been studied, many of which were ulcer cases with more or less obstruction.

The presence of *blood in the stomach contents*, unless excessive and repeatedly present, is a finding to be accepted with great caution. The old guiac test is surrounded by numerous possibilities of error, largely because of its lack of delicacy. For gastric contents the benzidin test is too delicate, in our experience over 80 per çent. of all test breakfasts showing trace of blood by this test. However, a deep blue reaction persistently present is not to be ignored. The more recent phenolphthalein test, devised by Boas*, seems to have approached the optimum of delicacy, taking a position intermediate between the other two.

Accidental and other sources of bleeding, pyorrhea, aspirator-trauma, esophageal varices, as well as bleeding from gastric varices that occur in gastroptosis, to which Jones, of Portland, recently directed our attention, must be carefully excluded. It might be stated to advantage here, that a certain type of high grade midline ptosis frequently gives pain several hours after eating, when the stomach is making its futile efforts to evacuate the residuum of the preceding meal. If in such a case bleeding occurs from the varices mentioned, duodenal ulcer would be the diagnosis, in the absence of properly executed fluoroscopy.

We have learned to accept *occult fecal blood* with even greater caution, especially if attempts have been made to aspirate stomach contents or proctoscopic maneuvres have been practised. For feces examination we use the benzidin test exclusively, considering it none too delicate, provided only such tests be considered positive that *turn deep blue at once.* The importance of keeping the patient on a non-meat diet at least forty-eight hours before beginning the examination and marking the beginning of such diet with a mild oil cathartic, cannot be too strongly emphasized.

The clinical picture of pyloric stenosis, with the dilated paretic stomach, and vomiting of stagnant food, or at a somewhat earlier period with visible peristalsis and slightly delayed motility, is classical but, thanks to aggressive surgery and early diagnosis, now seldom seen. Stenosis in the stage of compensation, with hypertrophic musculature and colicky pain, is seldom looked upon as such because the obstruction is pretty well overcome by the hypertrophied muscle, so some extra-gastric condition is often diagnosed. Visible peristalsis does not occur during this period, and the slight degree of delayed motility is easily if not sure to be overlooked by aspiration methods, aspiration having serious limitations, inasmuch as small quantities cannot be recovered with certainty and patients object to a too frequent use of the aspirator.

Hour-glass stomach was almost never diagnosed in former days, it being purely an autopsy finding, except in those very rare cases where emaciation was so great that the two distended portions could be seen after Seidlitz powder distension, and then only if conditions favored passage of gas from the cardiac into the pyloric sac. Any other means of preoperative diagnoses of hour-glass contractions were founded upon fantastic ideas of diagnosis or clever guesses where some peculiar finding was made by aspiration or on percussion.

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*Deut. Med. Wochschr. 1911, P. 62.

Some of the complicated tests depending upon the determination of N. in the washings of the fasting stomach and examination for oxyproteinic acid* in the urine, worked out by Soloman and his co-workers, have been disappointing. The biologic reactions have so far been utter failures from a clinical standpoint.

After all the time honored methods enumerated have been carefully applied, a satisfactorily definite diagnosis can be reached in only a very small percentage of cases. The clinician will often hedge when correct and, at other times basing his position upon classic findings, will discover himself ridiculously wrong at operation.

From this unsatisfactory state of our diagnostic ability we have been lifted by the radiologic and fluoroscopic studies of Rieder, Holzknecht, Haudek, Schmieden and numerous other continental as well as a number of American students. The contents of the normal abdominal cavity present little or no contrast on an ordinary x-ray plate or fluoroscopic screen, but, on filling the stomach and intestines with food or other suspending media containing sufficient quantities of bismuth salts, as proposed by Rieder (or barium sulphate by Schwartz), distinct shadow outlines of the various parts of the alimentary canal may be seen. Studies of shape, position, tonicity, motility and mobility may be made under ideal conditions, without interference by stomach tube and at no greater inconvenience than that of loss of time in making repeated examinations. X-ray burns of patient have yet to be reported and, aside from a few minor intoxications, no bismuth poisoning has been reported.

Studies of the stomach may determine position, shape, size, tonicity, motility and mobility and definitely localize into or out of the stomach, tender points or tumors. Minor grades of delayed motility, such as the internist never dreamed of before the advent of this diagnostic measure, and would still escape the Ewald aspirator though known, are determined at a glance with unfailing accuracy. Carcinoma can be diagnosed much earlier than in former times and there is much promise for further improvement in interpretation along this direction. The line between operability and inoperability is being more sharply drawn, therefore the number of exploratory laparotomies reduced to a minimum. The differentiation of ulcer and carcinoma can be made with almost unfailing accuracy. Gastroptosis and intestinal stasis, those troublesome and long misunderstood conditions, so often met with in patients whom we have been in the habit of misjudging and casting into the discard of unwelcome patients as neurasthenics, become as open books to be read with interest and pleasure, because so much can be done for them—usually medically—and the few that are then left, surgically.

By our older methods the tumor or tender point was projected upon the surface by palpation or percussion, as the case might be, and, if there were gastric symptoms, and the point of projection corresponded to the area usually thought to be occupied by the stomach, it was attributed to that organ. This was usually more or less crudely checked up by CO_2 distension, reasonably accurate for tender points, but less so for tumors.

Today we fill the stomach with a bismuth containing meal, examine the patient behind a fluoroscopic screen and locate the tender point or tumor with one hand and with the other manipulate the stomach. If displacement in the two correspond, that is, one moves as the other, and in the case of the tumor remains within the shadow of the stomach, there can be little or no doubt as to the relationship of the two.

There seems to be a feeling that the fluoroscopic diagnosis of stomach conditions is not based upon scientific principles, probably because the old fluoroscope proved itself so susceptible of grave error. As a matter of fact, the method is exceedingly simple, highly accurate and fully in consonance with pathologic anatomy. We feel that a diagnosis based upon properly interpreted fluoroscopy when its limitations are understood, is one that must not be lightly set aside by the surgeon at the time of operation. It is fully conceivable that an acute ulcer of the stomach can be overlooked by the surgeon if gastrotomy be not practiced, when the fluoroscopic picture is typical and unmistakable.*

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*Soloman—Deut. Med. WochenSchrift, 1903, P. 546. Soloman & Saxl—Wiener Klin. WochenSchrift, 1911, P. 449.

For the surgeon to fail to recognize a gastroptosis of high grade that is an open book to the fluoroscopist is a frequent error made by those who are not friends of this method of diagnosis. That conditions on the operating table, the patient in the prone position under a general anesthetic, the stomach empty as it should be at such time, differ materially from conditions seen on the fluoroscopic screen, when the stomach is filled, and observed under working condition, goes without saying. The severest criticism that can be brought to bear, that alleging distortion by divergent rays, is but to criticize the fluoroscopist, not the method.

The technic we follow is that suggested by Holzknecht and Haudek. The patient is given a thick porridge, containing sufficient bismuth to make proper contrast. After six hours of fasting he is examined for motility, the normal stomach being empty at this time. He is then given a bismuth emulsion in water, its passage through the esophagus being observed. A second bismuth porridge is then given, to distend the stomach fully, its size, shape, position, tonicity, motility and possible adhesions or deforming scars or growths being studied both with and without simultaneous palpation. When the question of intestinal stasis is to be determined, further examinations are made at six and twelve hour intervals for two to three days. The fluoroscopist who is gifted with sufficient sense of form comes very soon to recognize the typical conditions confronting him on the radiologic screen almost at a glance, very much as the experienced medical man does a tabes, a Graves disease or the facies of advanced gastric carcinoma.

There are certain normal shadow outlines of the stomach that one must become familiar with. It is a more or less hook-shaped, vertically placed organ, with two fixed points, the cardia and the duodenum. Its lower border when filled is at or slightly above the umbilicus. A stomach that is free from ulcer spasm and pyloric obstruction of organic nature, not extremely ptotic, empties itself of the bismuth meal within six hours (2½—6). However, it must not be forgotten that an empty stomach does not preclude the possibility of organic disease. Indeed, hypermotility is characteristic of some, notably callous, duodenal ulcers.

GASTRIC ULCER.

Certain symptoms may be recognized as characteristic of ulcer of the stomach. First and most important is the *residue after six hours.* This may be dependent upon organic, pyloric obstruction or upon the reflex spasm due to ulcer distant from the pylorus. It is the most constant and characteristic radiologic phenomenon of ulcer.

Second, the *incisura,* which early in this work led to so many false diagnoses of hour glass stomach. It is simply a localized spasm in the region of the ulcer, persistent, sometimes even after exhibition of atropin. Such incisurae appear on the greater curvature, the apex pointing at the ulcer on the lesser, as can be verified by finding the third sign, *tenderness,* at this point on the lesser curvature. This is perhaps the most commonly present of the three mentioned, but is less impressive because one or both the others previously mentioned will be noted almost at first glance. It becomes, therefore, more or less a confirmatory sign. In those cases of suspected ulcer, where history and gastric findings are confirmatory, a persistent tender point on the lesser curvature justifies the presumptive diagnosis of ulcer, even though the six hour residue be absent.

Fourth, *delayed opening of the pylorus,* as observed after giving the second meal in the Haudek technic. This phenomenon may be observed in a spastic stomach that does not show the six hour residue.

Fifth, *hyperactive peristalsis* may be dependent upon either organic or spasmodic stricture of the pylorus. This may be defined in general as waves of abnormal length and depth, beginning at or near the cardia. It should be added that this phenomenon may be seen under other conditions than ulcer obstruction, such as hyperacidity dependent upon reflex causes.

Sixth, *reversed peristalsis* (antiperistaltik of Jonas), rarely seen but significant of organic disease of the stomach or its outlet.

Seventh, *visualization* of the bismuth-filled crater of the ulcus penetrans, surmounted by a gas-bubble, called by Haudek the "nischen symptom." The writer has not yet had the good fortune to observe this sign in his own work but has seen Haudek demonstrate such a case.

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*Thus Sippy, in discussing Carman's paper at A. M. A. in Minneapolis, last June, reported a persistently present hour-glass stomach that showed no ulcer at operation. Carman's retort that there must have been an ulcer present that was overlooked by the surgeon, is in consonance with the experience and observations of Holzknecht and Haudek, who do not allow the surgeon to contradict their diagnosis "ulcus ventriculi," unless the surgeon perform gastrotomy.

Eighth, *shortening of the lesser curvature,* displacing the pylorus to the left and upward, which occurs in modified form in carcinoma also. (Schneckenform, of Schmieden and Härtel; Linkshochlage des pylorus, of Haudek.) This leads to a kinking of the duodenum by tension, thereby further delayed motility, and a sharp flexion or v-shaped greater curvature, hence also called the acute fish-hook shape (Carman).

Ninth, *true hour-glass stomach.*

Other signs of ulcer mentioned by many writers have not found sufficient corroboration to warrant acceptance. Perigastric adhesions might produce shadow pictures susceptible of analytic interpretation as being due to ulcer, but too often similar pictures would depend upon adhesions about a chronically inflamed gallbladder. It would seem wise, therefore, to the writer, to stop with the nine signs enumerated, and accept any other abnormalities as dependent upon those described.

DUODENAL ULCER.

The signs of duodenal ulcer are less characteristic. Indeed, the diagnosis of this lesion from a radiologic standpoint is far from being on a firm basis. Most often it is made more or less intuitively by the fluoroscopist, because "there is something atypical present."

The signs are,

First, *any of those that occur in gastric ulcer,* viz., six hour residue, hyperperistalsis, tender point, ulcus penetrans.

Second, *hypermotility.* The stomach may empty itself unusually early, due to the constant patency and insufficiency of the pylorus when the ulcer present is callous.

Third, *permanent visualization of the duodenum,* due to the same cause, a lagging of the bismuth in a hard non-collapsible bulb.

Fourth, *distortion of the duodenal bulb.*

There seems to be a remarkable dearth of literature on this phase of the subject in general, but Germans in particular, just as they fail to see duodenal ulcer frequently at operation, fail to diagnose it altogether. It has occurred to the writer that possibly an explanation may rest upon the following facts and reasoning. The prominent symptom of duodenal ulcer being hunger pain, it is possible that the German sufferer from duodenal ulcer never experiences this symptom because he eats so frequently. Those who are familiar with the German habits know that he has an empty stomach only during the few hours between midnight and breakfast and often not then if he belong to the wealthier class who have a "souper" at midnight.

Often the fluoroscopic signs of duodenal ulcer are produced by chronic appendicitis and cholecystitis, adding another source of error to this particular field of fluoroscopic diagnosis. For example, pericholecystitic adhesions may produce distortion of the duodenal bulb or cap. Chronic appendicitis, for some unknown reason, may cause early free opening of the pylorus and produce thus a patent permanently visualized duodenum.

CARCINOMA.

The fluoroscopic signs of gastric cancer are dependent upon the changes seen in the diseased portions of the stomach, rather than the changes produced in the healthy portions of the organ as they are in ulcer. To illustrate, the incisura of ulcer is on the greater curvature (healthy portion), that of carcinoma being at the seat of disease.

The signs of carcinoma may be enumerated as follows:

First, *filling defect.* Carcinoma, in contradistinction to ulcer, produces excess of tissue. The cavity of the viscus is lessened and at this point the shadow produced by the bismuth would in consequence be lessened.

Second, *diminished size of organ.* This is especially true of scirrhus infiltrating carcinomata and speaks for carcinoma not on ulcer basis.

Third, *absence of peristalsis* in diseased portions of the organ.

Fourth, *residue after six hours* in an anacid stomach that shows normal shape and tonicity. This speaks with certainty for a small nonpalpable carcinoma of the pylorus.

Fifth, *assumption of the steer-horn shape* of stomach speaks for an advanced, inoperable carcinoma of infiltrating type, particularly if there be no residue after six hours (pyloric insufficiency).

Sixth, *an incisura on the lesser curvature,* as previously mentioned, speaks almost absolutely for carcinoma.

Seventh, *a large stomach plus filling defect,* with impaired motility, speaks strongly if not absolutely for carcinoma on ulcer basis, for the reason that dilatation of the stomach does not occur in primary carcinoma. First, because the patient does not live long enough; secondly, because it is the very nature of the disease to cause contraction and shrinking of the organ. Dilatation in carcinoma is a relic of the ulcer period of the disease.

Eighth, *a stiffened, gaping pylorus*, with evidence of distortion, speaks strongly for carcinoma.

Ninth, in such cases of gaping pylorus, *achylia, plus well advanced movement of the six hour meal,* say to the splenic flexure, speaks strongly for nonstenosing carcinoma.

The following typical cases are selected for report, being either confirmed by operation, subsequent course or are otherwise well authenticated. Cases 1, 2 and 3 illustrate nicely the accuracy with which one can diagnose gastric ulcers, even when the history is rather atypical as in case 3, in whom the finding of an ulcer was rather a surprise to the writer, the case being considered probably one of mucous colitis, until the fluoroscopic study cleared the picture. Case 4, the carcinoma on ulcer basis, could be so diagnosed because a carcinoma so small could not have caused a stomach so large. There must have been stenosis before carcinoma was present, hence on ulcer basis. Case 5 shows an error committed in ignoring a negative fluoroscopy and relying upon the constant finding of blood in stools without corresponding blood in stomach contents to establish the diagnosis of duodenal ulcer. Case 6, supposedly a carcinoma of the stomach, could be definitely shown not to be a carcinoma, though a diagnosis of pernicious anemia could not be made at the time the fluoroscopy was done, in fact not for some months after. Case 7 has been added to show that conditions other than those usually considered the only causes of six hour residue may operate similarly. In this case undoubtedly the infiltration of the serosa of stomach and ileum by carcinoma metastases led to a mechanical obstruction of unusual nature and closely simulated the findings of pyloric ulcer. Case 8 is a typical carcinoma of the stomach from a fluoroscopic standpoint. Our practice of making a fluoroscopic examination in every case of abdominal pain led to the discovery of this carcinoma, the history certainly not leading one to suspect this lesion. A gastric analysis was then done to complete the clinical picture.

Many other cases diagnosed as ulcer and treated medically, or for other reasons not operated on, are not reported because they are open to criticism. During the past year the positive diagnosis of ulcer has been wrong but once, that being case 5 and then was directly dependable upon the setting aside of a negative fluoroscopic finding, and placing reliance upon an old clinical complex, viz., hyperacidity and melena without corresponding blood in gastric contents as indicative of duodenal ulcer.

Case 1. Referred by Dr. J. M. Neff, Feb. 6, 1913. H. E. P., age 51. Pyloric obstruction (well compensated) by old indurated or healed ulcer.

Gastric history of ten years duration. Comes on before meals when stomach is empty. More recently has noticed it about three hours after meals. Has vomited a great deal, especially at night. Vomiting gave relief from pain and discomfort. Gaseous distention of stomach shows abnormal retention of same and suggestion of visible peristalsis on proper illumination.

Two test meals showed a hyperacidity of moderate grade, a great deal of mucus in both specimens and an abundance of yeast cells. Numerous feces examinations showed a practical absence of blood. Fluoroscopic examination showed a small. sickle-shaped residue after six hours, most of the meal having passed on into the transverse colon. The second meal showed a violent hyperperistaltic action of the stomach and delayed opening of the pylorus. (Fig. 1.) There was no tender point or incisura.

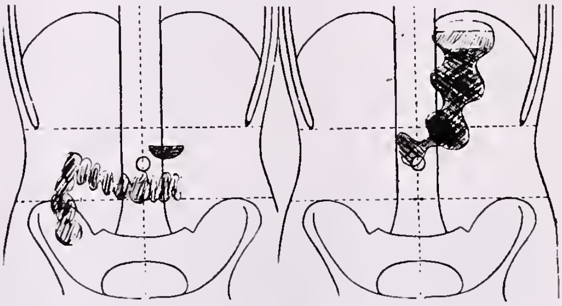

Fig. 1.
First cut after first meal; second after second meal.

Clinical diagnosis, old indurated, probably healed ulcer at the pylorus. Operation showed healed ulcer on pylorus with high grade stenosis.

Case 2. Referred by Dr. L. C. Borden, March 27, 1913. J. E. K., Nelson, B. C., age 42, ulcer on lesser curvature.

Patient had had pain to the left and above the umbilicus, throbbing in character, with sharp acute stabbing exacerbations, both of which were referred to the left hip and lumbar region. His condition was diagnosed appendicitis three years ago and appendix removed; no relief of symptoms. For past month has had hunger pains after the noon and evening meals but never after breakfast. Has been eating to relieve his pain, especially about midnight. One attack of vomiting a day or so ago.

Two test meals showed moderate grade of hyperacidity. Free acid 40, total 68; free acid 58, total 78, respectively. Blood was found in all specimens of stomach contents and five stools while on meat-free diet. Fluoroscopic examination showed a large mass, with fully three-fourths, if not more, of the bismuth meal still in the stomach at the end of six hours. On filling stomach it was shown to be hypertonic with exaggerated peristalsis and a permanent incisura on the greater curvature in the antrum of the pylorus, at the apex of which was his point of greatest tenderness. (Fig. 2.)

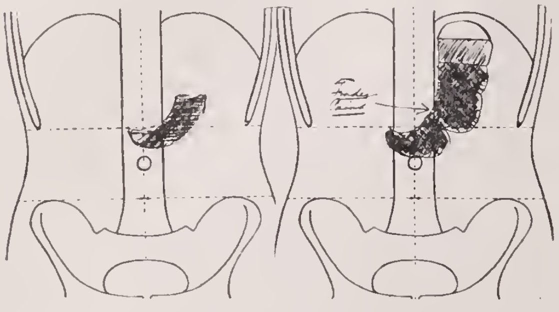

Fig. 2.
First cut shows six-hour residue; second shows incisura.

Clinical diagnosis, active ulcer on the lesser curvature in the prepyloric position. Went to Mayo clinic. Diagnosis duodenal ulcer but not operated on.

Case 3. Referred by Dr. J. M. Neff, Aug. 11, 1913. G. H. M., age 26.

Began seven years ago with attack of diarrhea, vomiting and passage of bloody mucus in stools. Vomited daily for six or seven months, though often induced because it relieved pain. Since then attack of diarrhea and passage of mucus about once a month, lasting five or six days with crampy pains in abdomen, occasionally sharp and cutting in character. Since then has noted soreness near umbilicus on right side when wearing tight belt. Pain not related to meal-taking nor relieved by same, though thinks they are worse when hungry. Much flatulence.

Physical examination negative except substantiating presence of tender point. Gastric analysis. Free acid 40, total 70, no sarcinae, blood 0. Stool, four specimens, no blood but a faint trace in one.

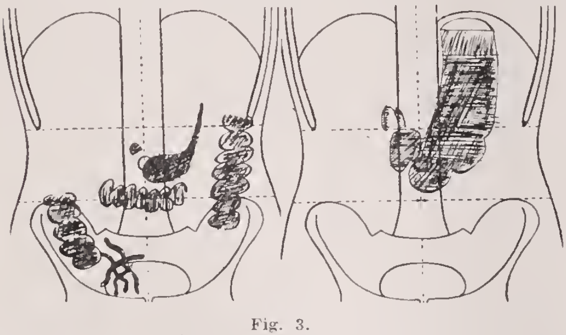

Fig. 3.
First cut shows six-hour residue and hyperperistalsis; second large dilated stomach.

Fluoroscopy, large residue after six hours, with a permanent shadow in duodenal bulb. Second meal shows large, dilated stomach extending three finger breadths below umbilicus, with marked hyperperistalsis beginning in cardiac portion and sharply accentuated in region of pylorus. The duodenum remains permanently visualized as a flexed finger-shaped shadow with which the tender point corresponds. (Fig. 3.)

Diagnosis, duodenal or pyloric ulcer. Operation, old healed ulcer just on pylorus with considerable stenosis.

Case 4. Referred by Dr. J. M. Neff, June 27, 1913. Mrs. F. N., age 62; housewife.

Has had trouble for the past eighteen months. Constipation and indefinite pains in the stomach, which had no direct relationship to eating, were aching in character and accompanied by excessive gas formation. Appetite fair, no nausea or vomiting at any time. Constipation has been very excessive. Seven or eight months ago stools were very dark for several days.

Gastric analysis shows a normal free and total acidity. There were faint traces of blood present. Numerous feces examinations showed no blood in appreciable quantities. Fluoroscopic examination show a large cup-shaped residue after six hours, with the mass of the meal in a normal-shaped somewhat mobile large cecum. Second meal shows a large filling-defect in the region of the pylorus, which is not tender. Stomach enormously dilated and reaches five finger breadths below the umbilicus. There is hyperperistalsis present, beginning at the height of the fundus and extending entirely to the pylorus. (Fig. 4.)

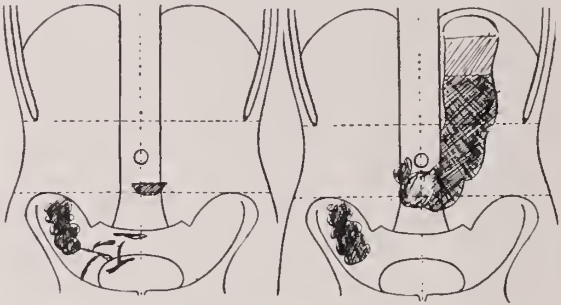

Fig. 4.
First cut shows massive cecum; second filling defect near pylorus.

Clinical diagnosis, carcinoma of the pyloric region on ulcer basis; operable because the shape of the stomach had been retained.

Operation showed an old, indurated ulcer, which had undergone carcinomatous degeneration, at the point where filling-defect was found on fluoroscopic examination. Resection; four months later free from symptoms except slight flatulence.

Case 5. Referred by Dr. J. M. Neff, Feb. 5, 1913. F. S., St. Maries, Ida., age 28.

Symptoms of four years duration. Burning pain in epigastrium one hour after breakfast, and one and one-half to two hours after other meals, not relieved by eating. Frequent belching. Never noted blood in stools, never vomited. Greasy foods more distressing than others.

Test breakfast showed free acidity 50, total 78, and also showed excessive secretion, that is, over 150 cc. were removed, whereas the liquids in test meal were only 100. There was no blood present but many yeast cells. Five specimens of stool, on meat free diet, showed blood in definite quantities, only one being free from blood. Fluoroscopic examination showed a normal emptying time, normal-shaped stomach as well as normal peristalsis. The motility of the intestinal tract was somewhat increased.

In spite of a negative fluoroscopic examination, a duodenal ulcer was diagnosed because of the almost constant blood in the stools, the marked hyperacid hypersecretions and the abundance of yeast cells. Operation showed a normal stomach, normal duodenum, but an old chronic appendicitis firmly bound down by adhesions, containing small fecal concretion with a stercoral ulcer underneath, probably the source of the blood.

This man has been free from symptoms since operation. It is, therefore, to be presumed that there was no acute ulcer that might have been overlooked at the time of operation. Ignoring negative fluoroscopic examination in this case was the direct source of error in diagnosis.

Case 6. Referred by Dr. A. T. R. Cunningham, Feb. 11, 1913. J. D. C., age 60. Pernicious anemia.

Sent to me as suspected carcinoma of stomach. Trouble began nine months ago with a very severe diarrhea that has persisted in greater or less degree since. Loss in weight 10 pounds. No pains after eating, no vomiting.

Physical findings. Pale, though not emaciated, individual. Heart, lungs and abdomen negative. CO_2 distention of stomach causes much distress and symptoms of collapse, but does not reveal tumor or enlarged stomach. Test meal, free HCl 0, total 2, lactic acid 0. Fluoroscopy reveals orthotonic, orthoperistaltic stomach with pyloric insuffiency, early emptying time (end reaction not noted). Blood findings those of pernicious anemia of aplastic type, that is, nucleated reds and megloblasts were not found for months afterward.

The case has since run a course typical for this type of anemia and there has been a remission during which the man was able to attend to business as usual. He is now, however, in bed, probably within ten days of a fatal end. Megloblasts were found for the first time about five weeks ago.

Case 7. Dr. G. E. M., age 58. Secondary carcinoma of peritoneum (primary in prostate).

Bladder trouble in spring of 1912, urinary retention, cystitis. Became catheter user. Prostatectomy Sept., 1912. Since then pain in back, hips, legs and abdomen. Begins in region of stomach, radiates to back. No relationship to, not relieved by food taking. Admits taking 4-5 grains of morphin daily.

Findings. Emaciation, rather anemic. Systolic blood pressure 218, diastolic 170. Nodular arteriosclerotic vessels. Can feel several masses, nodular, rather tender on either side of spinal column, larger below than above. Rectal negative, fluid in abdomen. Letter from operator says that prostate showed scirrhus carcinoma. Fluoroscopy, greater portion of bismuth lies in ileum near cecum. Small amount in cecum. Small sickle-shaped residue in stomach at level of umbilicus. Second meal shows a rather large stomach with marked hyperperistalsis. (Fig. 5.)

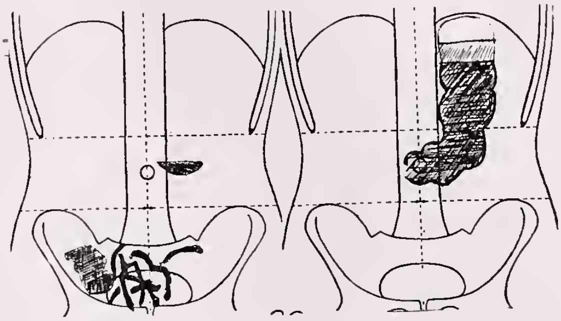

Fig. 5.

First cut shows six-hour residue and stasis in ileum; second hyperperistalsis and slightly enlarged stomach.

Interpretation. Delayed motility due to carcinoma of peritoneum, the infiltration incident thereto having led to the retardation of movement of intestinal contents.

Case 8. Referred by Dr. J. F. Hall, Jan. 22, 1914. E. A. McK., age 50.

Previous history. Ten years ago he had what was called chronic gastritis. Washed stomach daily and removed large quantities of mucus. Since then has been very well. Five weeks ago, while

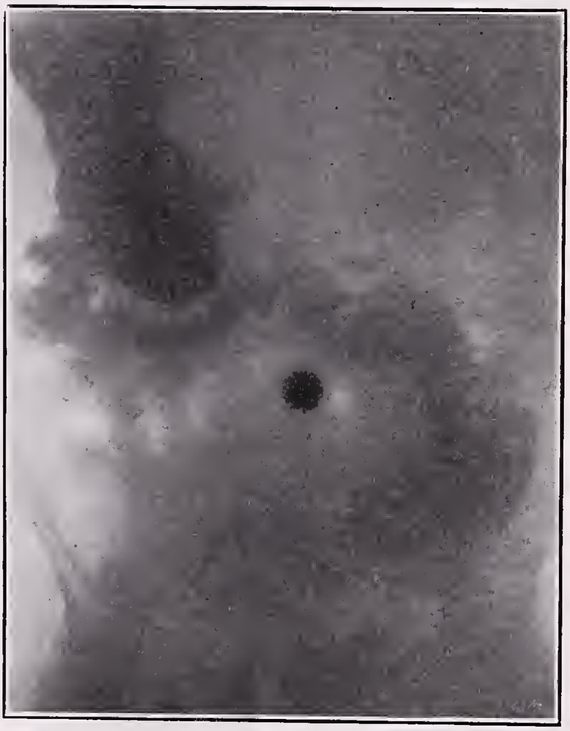

Fig. 6.

carrying heavy sack of coal, slipped and on recovering himself felt severe epigastric pain which has persisted ever since, although it is gradually becoming less severe. There have been no stomach symptoms of any kind; bowels have been regular; no blood noted. Has not noted temperature; has been somewhat dyspneic; no cough, no expectorations, no loss of weight.

Physical examination. Rather pale individual. Small amount of free fluid in the abdomen and slight tenderness in upper abdomen. Gaseous distention of stomach causes slight discomfort but no pain; gas does not pass through pylorus as promptly as it should.

Fluoroscopic examination shows a moderate sized residue in the position to be expected in a hypertonic stomach. The filled stomach is small and deformed on its lesser curvature which is immovable. Pylorus is drawn upward and to the left, also immovable and on radiographic examination shows a worm-eaten lesser curvature. (Fig. 6.) Gastric analysis. Forty-five minute meal about the normal quantity without free acid; a trace of lactic and much blood.

Clinical diagnosis, inoperable medullary carcinoma of the lesser curvature, with pyloric obstruction adherent to the under surface of the liver.

Operation by Drs. A. A. Matthews and J. F. Hall. Large, medullary carcinoma of the lesser curvature which has caused shrinking and shortening of the same, drawing the pylorus up to within three of four inches of the cardia, with considerable perigastritis, the entire mass being adherent to the under surface of the liver. There was considerable bloody fluid in the abdominal cavity. This doubtless was the remains of an old hemorrhage due to the tearing probably of some of the adhesions between the stomach and the liver, at the time the patient had had his acute symptoms five weeks ago. The pylorus was not patulous enough to admit a finger. Anterior gastroenterostomy was done, the posterior wall of the stomach being inaccessible.

CHRONIC PYELITIS.

By W. J. Pennock, A. B., M. D.
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This paper is limited to the chronic inflammations of the kidney pelvis, referring only to the cases of more extensive infection as may be necessary in order to differentiate them as to diagnosis and prognosis. The first feature striking our attention is the interesting one of what factor it is which determines the localization of infection at this spot, which opens a large field and one in which are held many opinions of very considerable variance.

For a long time it has been considered that the infection is the result of an extension upward from the bladder, as in practically all cases there is a severe involvement of the bladder mucosa in connection with the pelvic inflammation. The patient will commonly consult his physician for relief from the bladder symptoms, being absolutely free from subjective symptoms calling attention to the condition in the kidney. When the bladder condition is not cured by conscientious treatment, suspicion is first cast upon the kidney and in most cases, unless the patient has noticed pyuria antedating the cystitis, it is impossible to say that the pyelitis occurred first.

We must consider that (1) the bladder mucosa is normally very resistant to infection; (2) there are many cases of pyelitis in which there has been no apparent etiologic factor to produce a cystitis; (3) there is an enormous percentage of cases of severe cystitis which never develop pyelitis; (4) there are certain cases of well-marked pyelitis in which there never has been a cystitis or urethral infection.

Toward the gonococcus (which is the commonest pyogenic infecting organism of the lower urethral tract) the bladder shows quite a decided resistance and it is very rarely found as an etiologic factor in pyelitis. Ward, in a study of 187 cases, laid great stress in pregnant women on the pressure of the uterus during the latter months on the ureters as they cross the pelvic brim as a predisposing cause by the production of stasis and trauma. Urethral stricture and prostatic hypertrophy are also predisposing causes by the development of back pressure of urine. In cases of bladder distention pyelitis may develop with no implication of the ureters.

Aside from ascending infections from the bladder, infection may occur in three different ways. (1) Metastatic, as from perinephritic abscess, septic infarct or general septicemia; (2) by direct extension, as from the colon; (3) by the lymphatic tracts.

As instances of infection by a metastatic route may be mentioned the cases occurring after furuncles, or carbuncles, in which the staphylococcus aureus may usually be demonstrated. They may occur weeks or even months after the original local infection. Finally we must look to the systemic infections as possible etiologic factors, in which the pyemias and typhoid are the most likely to produce an infection of the pelvis. From a standpoint of mechanical irritation renal calculi are a predisposing factor.

Bacteriology. Bacillus coli communis is the most common organism found in infections of the pelvis. The staphylococcus aureus or albus occurs next in frequency and the streptococcus is sometimes present. Most of the pyogenic organisms have been found in different cases but occur with greater rarity. I recall one case showing a pure bacteruria, in which b. pyocyaneus was present in pure culture, where there was absolutely no pus production. This case was, however, hydronephrotic and so does not come under our present discussion. I have purposely not included b. tuberculosis as I feel that when its presence is demonstrated it indicates a tuberculous process in the parenchyma of the kidney and, even where the pelvis alone is apparently involved, the fact that the infection is tuberculous renders it immediately a surgical kidney.

When an infection of the pelvis has occurred there may be symptoms of an acute infection with the general symptom-complex of a septic process with or without localizing symptoms in the kidney regions. There are a large number of cases in which, without any history referable to the kidney, pyelitis develops, the infecting organisms pass down the ureters and involve the bladder, and the patient first consults us for the symptoms of a typical cystitis without suffering from any symptoms referable to the kidney. It is very easy to overlook the pyelitis and, regarding the case as one of cystitis alone, fail to produce a cure through failure to recognize the pyelitis present.

There are a few features that should be of a considerable help to us on this point. First, if a patient comes with symptoms of cystitis and has had a posterior urethritis preceding the bladder symptoms, the chances are much in favor of this condition being an involvement of the trigone by continuity and it is proper to treat it as such. But the case showing symptoms of cystitis without any natural predisposing factor for its development should be regarded with suspicion. Again, the cystitis that does not yield readily to treatment should not be considered simply an obstinate case, but the question should be decided at once as to whether there is not a source of infection above the bladder with consequent constant reinfection of the bladder mucosa.

The diagnosis of chronic pyelitis depends upon the demonstration of pus and bacteria in the pelvis of one or both kidneys. The diagnosis will be strongly suggested if, on examination of the bladder, whitish, necrotic ulcerations with raised inflammatory edges are found, especially about the ureteral orifices, accompanied usually by edema and reddening of the orifice itself. Pus-containing urine can often be seen ejected from the ureter of the affected side but negative findings should not be regarded as of diagnostic value.

A few points must be considered which, though apparently very simple, are of considerable importance in making a reliable diagnosis. Most cases of pyelitis are complicated by secondary cystitis. Therefore, the bladder will contain many pus-cells and care must be observed, first, that these are not carried into an uninfected kidney, and, secondly, that we do not allow them to confuse our diagnosis. In the following way we may easily obviate this. Washing the bladder until the returning fluid is clear will mechanically remove most of the pus-cells. Plugging the distal ends of the catheters will prevent the fluid in the bladder from entering them. Throwing away the first four or five cc. excreted and collecting a specimen for examination after the urine itself has washed out the catheter will give us urinary material upon which we can safely base a diagnosis.

If tubercle bacilli be found or if animal inoculation shows tuberculosis to be present, we assume that either or both medulla and cortex are involved. There are two means which are a great aid in establishing whether the process is limited to the pelvis or there is a pyogenic infection of the medulla and cortex. These are the pyelogram and the kidney function.

One of the colloidal silvers, as collargol, being injected into the pelvis, a radiograph gives a clear picture of the kidney pelvis, its size, shape, position of the calices, whether or not the kidney substance is in normal amount, and also shows any abscess of the kidney. It is apparent, however, that there may be pus foci in the substance of the kidney into which the collargol will not penetrate and which do not show on the plate.

The next step, therefore, is to demonstrate whether or not the function is normal and if not, what percentage of the normal function each kidney is capable of performing. There are several methods for doing this. The amounts of urine excreted from each kidney in a definite time should be compared with each other and with a normal. The specific gravity and the urea determination of the separate specimens are of importance as indicative of their respective functions. The polyuria test has many adherents, but has some drawbacks, particularly the length of time consumed in the process. It is a perfectly simple method, consisting of measuring the amounts of urine from each kidney after the administration of copious drafts of water.

The test upon which I place most reliance is the functional test of the kidneys, using phenolsulphonepthlalein as an indicator. This, together with an accurate estimate of the urea and the chemical and microscopic examination of the urine, will furnish the means of reaching a reliable diagnosis in most cases. If we find that we secure an approximately normal amount of urine from each kidney, of normal specific gravity, that the urea excretion is normal, that phthalein appears within a normal time after the injection, that a normal amount is excreted in a given time, and that the urine from one or both kidneys contains pus, the diagnosis of pyelitis is made.

As to treatment there is at present a movement toward the employment of stronger antiseptic solutions than were formerly considered advisable. Our experience with silver nitrate has been so favorable that I have great faith in it in fairly strong solutions. Bichloride of mercury and formaldehyde have been used to a considerable extent but we have had several cases that resisted the most conscientious pelvic lavage with these agents and yet yielded promptly to an injection of silver nitrate of from 1 to 5 per cent. Some workers have felt that the colon infections were particularly responsive to the silver treatment, but in general it has seemed to me that nearly all cases of pyelitis responded better to silver nitrate than to other injections.

There seems to be no objection to relatively strong solutions, although it is better to begin with 1 or 2 per cent. and see how the patient reacts to them before trying the stronger solutions. In some cases, particularly following the first injections of the silver nitrate in 5 per cent. strength, the patient has complained of a burning sensation in the region of the ureters and a deep seated pain in the region of the kidney. These symptoms were not constantly present and were not severe. Quite a few cases complained of a burning sensation in the ureters for several minutes without pain in the back. One case of marked hematuria, for which no cause was found, was treated empirically with silver nitrate and developed pain severe enough to necessitate the use of morphin. I can best illustrate some of the points in this paper by citing one or two cases of pyelitis which are fairly typical.

Case 1. George M., 18 years old, single, farmer, admitted July 25, 1913. Family history negative. Past history negative, except for an attack of acute anterior poliomyelitis. This occurred three years ago and left atrophic changes in left arm, shoulder and chest. Denied gonorrhea and lues.

Present history. Six weeks before coming under observation patient began to have bladder distress and frequency of urination with pronounced tenesmus. He gradually became worse in spite of treatment directed to the relief of the bladder condition.

Physical examination. Patient weak and in considerable distress. External genitals normal. Prostate, seminal vesicles and vas normal. No urethral discharge. Urine, all three glasses cloudy with pus-cells, and third contained a few red blood cells. Cystoscope passed without difficulty. Bladder capacity was normal. No diverticula nor calculi. Trigone hyperemic and congested. Both ureteral orifices, particularly the left, were swollen. Bladder mucosa was not ulcerated and the rest of the bladder was normal but somewhat hyperemic. Urethroscopic examination showed the verumontanum greatly swollen and edematous, bleeding at the slightest touch and filling the urethra. The rest of the urethra was normal.

The verumontanum was treated with fused silver nitrate. Soon after the first treatment the symptoms improved, urination became less frequent and the tenesmus diminished. After three treatments the patient became perfectly comfortable, the urinary interval became normal, urination was painless, and he began to gain in weight.

The urine, however, remained cloudy with pus-cells, the last specimen showing no red blood cells, these evidently having been expressed from the inflamed verumontanum. Both ureters were now catheterized and the urine from the right pelvis was found to be normal. That from the left contained many pus-cells, no bacteria, and cultures made from the urine remained sterile. Guinea pig inoculations were negative. Collargol pyelogram of the ureter and pelvis were negative. Appearance, time and percentage of phthalein excreted were normal from both kidneys, the right excreting a small amount more than the left.

Pelvic lavage of the left kidney with 1 to 4,000 formaldehyde was instituted, repeating every fourth day but without appreciable results. After four treatments with the formaldehyde I injected 1 per cent. silver nitrate and the next specimen showed a decided diminution in the number of pus-cells. This was repeated three times but the urine did not entirely clear up. I then injected 5 per cent. silver nitrate and the urine was watched carefully for signs of kidney irritation. The excretion remained normal, no blood casts or albumin were thrown down and in four days the urine entirely cleared up and no pus-cells could be found. A letter from the boy two or three months ago stated that he felt perfectly well, was absolutely free from symptoms and the urine was perfectly clear.

Case 2. John B., age 22, single, clerk. Family history negative. Had gonorrhea two years previous to present trouble. Symptomatic cure in six weeks. Eight months previous to coming under observation had severe pyogenic infection of the left hand and arm and was in the hospital for three weeks. Shortly after leaving the hospital began to have bladder irritation, frequency, with pain and tenesmus. Was told he had gonorrhea and was treated with dilatation, bladder irrigation and prostatic massage, but symptoms steadily increased in severity. When he came under observation he was urinating about every twenty minutes, accompanied by great pain and distress.

Physical examination: patient well developed and nourished. External genitals normal. Prostate, seminal vesicles and vas normal. No urethral discharge. Urine: all three glasses cloudy with pus-cells and many good-sized cocci present which were Gram-positive and no culture was made. Urethra normal. Cystoscope entered bladder easily. Bladder wall was hyperemic. The trigone was congested and very edematous. Both ureteral orifices were much swollen, the left particularly being so edematous that it was difficult to pass the catheter into it. Urine from the right pelvis was normal; from the left was full of pus-cells, containing the Gram-positive coccus. The phthalein excretion was normal from both kidneys. I injected 10 cc. of 10 per cent. collargol into the pelvis of the left kidney for pyelogram and within two days the patient showed definite improvement. The urine began to clear up, all symptoms became less severe and within a week, without further treatment, urination became perfectly painless, intervals became normal and the urine perfectly clear.

It is evident that in this case the patient's infection came from the bacteremia from his infected arm and localizing in the pelvis. Also the bladder condition was secondary to the pelvic infection and was constantly being reinfected by the urine.

A STUDY OF TWENTY CASES OF RENAL TUBERCULOSIS.*

By Alex. H. Peacock, M. D.,
SEATTLE, WASH.

Only a short time ago pyuria, one of the chief symptoms of renal tuberculosis, was but vaguely understood and interpreted. The subject of urology was entirely elective in the medical schools and only a few of the graduating students had but the faintest knowledge of the diseases affecting the urinary tract, how to make a systematic examination and an accurate diagnosis. With the splendid work of Kelly, Young, Hunner and many new workers, and with the highly perfected cystoscopes that are now available, pyuria has assumed an importance it never had before.

Patients complaining of urinary frequency, cloudy urine and general lowering of vitality are treated as a rule by the practitioner for cystitis and after a prolonged course of treatment he finds them only slightly if any better and still very uncomfortable. He then refers the cases to the urologist for an examination and diagnosis. The most important thing to determine is the infective organism producing the pyuria, which can be readily done by centrifuging a catheterized specimen and staining with methylene blue and several slides with carbolfuchsin. This being done routinely with all cases of chronically cloudy urine, you will be surprised at the number of times you will find the tubercle bacillus where it was never suspected.

Having determined the presence of the bacillus it becomes important to find out the condition of the kidneys, for we know that it is extremely rare to find a primary tuberculosis of the bladder, an organ that has great resisting powers. We can safely claim that all urinary tuberculosis is secondary, the infection being carried by the blood or lymph stream and that the real focus of infection usually lies in the lungs and pulmonary glands. Others claim and probably with some truth that the tonsils also are portals. The main thing to continually keep in mind is that, when we find the tubercle bacillus in the urine, we are not dealing with isolated prostate, bladder or kidneys but with an individual infected with a very serious organism and that there are other lesions to be found for the searching.

Nephrectomy is performed so frequently that little is thought of the operation and, as soon as renal tuberculosis is pronounced, usually the first and only thing thought of is to remove the kidney which the cystoscope has shown to be secreting pus and bacilli. We must take time to establish the full extent of tuberculous invasion, demonstrating as far as possible all the pathologic lesions in the patients being studied, for we find no two alike, each case having a different prognosis, depending upon local and general resistance, social conditions, the duration of the infection and its virulence.

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*Read before King County Medical Society, Seattle, Wash.

In this paper no attempt will be made to cover the whole subject of renal tuberculosis. I will point out the commoner symptoms and findings on examination and report a few cases to illustrate them. As a rule the earliest symptom is frequent urination and mild burning. These are progressive and, as the disease advances, become more pronounced. Another rather common symptom is hematuria, often unaccompanied by pain. In well advanced stages there is pain and heaviness in the kidney region. It may be in the affected organ but is found equally often in the well one, due to compensatory hypertrophy and overwork.

Where there are pieces of pus, shreds and blood-clots passing down from a tuberculous kidney, the ureter often becomes temporarily occluded and the patient has all the symptoms of an escaping renal calculus, colicky pain in the loin radiating into the testicle or down the outside of the thigh, vomiting, fever, chills, sweating and mild shock. A careful thermometer record will invariably show a rise above normal sometime in the afternoon. Then we have a general failure in health, loss in weight and a long-standing pyuria.

Case 1. Complaint, frequent and painful urination. Male, 16 years old, schoolboy. Had a tuberculous lesion of the right lung for some time, "arrested" with tuberculin. For the past two years he has suffered with pain in the right side. Six months ago had an exploratory operation, no pathologic lesions being found except a large right kidney. He has been worse since then, suffering with frequent urination, mild fever, pulse increased and losing steadily in weight.

Examination under ether. Bladder wall clear, no ulcers, no growths. Both ureters catheterized, showing tubercle bacilli from each and a few pus-cells. The right flowed twice as fast as normal. Abdomen was soft and neither kidney palpable. Diagnosis, general tuberculosis. In case nephrectomy had been promised the boy, hygienic treatment was advised.

Case 2. Complaint, attacks of colicky pain in right side. Male, 27, laborer. Mother's mother and mother's brother died of consumption. Patient had scarlatina, measles and mumps. Always done heavy work; does not use alcohol, tobacco in moderation. Two years ago taken with a sharp pain in right side, lasting three hours, vomited. Year ago operated on for appendicitis; afterwards same pain in same place. Pains have been periodic, accompanied by vomiting and sweating; sharp in character and remain in small of back and never radiate into testicle. These attacks are followed by frequency and blood in urine, the latter being cloudy for a long time. Last severe attack ten days ago; morphin to control pain, latter was violent and at edge of ribs.

Cystoscopy. Bladder slightly trabeculated. Right ureter eroded, catheterized to pelvis. Urine turbid, pus-cells and bundles of bacilli. Left side negative. Nephrectomy. Large kidney with large abscess in upper pole and a dozen small ones. Good recovery.

Case 3. Complaint, pus in the urine. Female, 23, married one year, never pregnant. About eight months' duration. Attacks of pain, colicky in character. Urine has been cloudy all the time. Lost twenty pounds in weight, no sweats or chills. Onset sudden, no hematuria. Small, slender woman; abdomen soft, thin; very tender over appendix and a mass felt in the region of the right kidney, left one negative.

Catheterized bladder; pus-cells, many colon and tubercle bacilli. Right ureter clean, catheterized to pelvis; pus-cells, colon and tubercle bacilli. Left ureter clean, no pus and no bacteria. Bladder no ulcerations. Nephrectomy by Dr. Horton. Large kidney, dilated pelvis and calices, cortex thin, filled with pus and urine.

Case 4. Complaint, frequent urination. Female, 24, single, living at home. Family history negative. Had a tuberculous toe-joint opened and a sticky pleurisy tapped. Has had frequent urination and burning for the past four months. Appetite has fallen off, sleeps well, no rise in temperature. Urine cloudy, many pus-cells and bacilli.

Cystoscope shows a diffuse cystitis, no ulcers, some pus. Right ureter catheterized. Urine pale, flowed six times faster than its fellow, pus-cells and bundles of bacilli. Left ureter, urine dark, amber, clear, bacilli a few.

Case 5. Complaint, frequent urination. Female, 14, school girl. Mother died of consumption. History negative except whooping-cough. Been ailing for the past nine months. Has a dull pain in right side, never acute; has to urinate frequently and is painful. Has not responded to local treatment. Never passed blood. Afternoon rise in temperature to 100°. Feels chilly.

Cystoscopy under nitrous oxide. Bladder contracted, irregular ulcers on the right side; plenty of pus. Right ureter edematous; thick pus obtained, pus-cells and bundles of tubercle bacilli. Left kidney negative. Nephrectomy. Improved for a time when old symptoms returned. Bacilli appeared from remaining kidney. Patient is fast declining.

Case 6. Complaint, cloudy urine. Male, 41, married, laborer. Troubled with bladder for the past two years, frequency and pain. Has passed a little blood and runs an afternoon temperature of 99 to 100°. Lost 25 pounds in two years. Catheterized urine shows pus, blood and tubercle bacilli.

Cystoscopy. Contracted bladder, general diffuse cystitis. Right ureter clean, urine negative. Left large opening, impossible to catheterize, meatus ulcerated and ragged. Nephrectomy, kidney large and saculated, filled with pus and cheesy material; good recovery.

Case 7. Complaint, hematuria. Male, 24, single, station helper. History negative. Well till one month ago, when he noticed blood in urine and had a slight backache. Blood cleared up in six days but reappeared two weeks later and lasted six days. Slight frequency, no pain on voiding. Had a mild rise in temperature, no loss in weight. Chest examination showed impaired resonance at apices.

Cystoscopy. Catheterized urine cloudy, pus and many bacilli. Bladder wall, mild diffuse cystitis, no ulcers. Right kidney, ureters swollen, urine smoky, staphylococci, pus, no bacilli. Left kidney, pus and tubercle bacilli. Six months later bacilli found in both kidneys. He had rest in bed and tuberculin.

Case 8. Complaint, pyuria. Female, 21, married, never robust. Had double salphingectomy and improved for a while. Frequent urination and soreness in the bladder for a long time. No blood, an afternoon fever. Small, slender woman, abdomen flat, right kidney not palpable, left large.

Catheterized urine very cloudy, pus and bacilli. Bladder showed linear ulcers on the posterior wall. Right kidney, urine dark, trace of albumin, no pus and no bacteria. Left kidney, no urine obtained; washings showed broken-down cells and bacilli. Nephrectomy, large sacculated mass full of pus. Died six weeks later from breakdown of the remaining organ.

Case 9. Complaint, hematuria. Male, 32, married, electrician. No infection and always had fair health. Eight months ago was lifting and strained himself. Shortly afterwards passed blood in the urine. Lasted several weeks and gradually cleared up. Only occasional frequency, no burning, skin test for tuberculosis negative. Slender build.

Cystoscopy. Capacity 7 ounces. Bladder irritable, small amount of pus and some blood, mild trabeculation. Right ureter, urine bloody, pus, staphylococci and tubercle baccili. Left kidney, urine negative for pus and bacteria. Nephrectomy. Kidney large, bloody abscess in central portion near cortex, containing one ounce. A large scar in the medulla, obliterating the middle of the pelvis, giving the latter an hour-glass shape. Primary union but wound broke down three months later.

Case 10. Complaint, pain in the bladder. Female, 34, married. Had a panhysterectomy for constant pain in the pelvis. Pain in the left side for the past three years, running down the sciatic nerve, under the knee and outside of thigh. Well nourished woman, bladder clean, no ulcers, no patches of cystitis. Left ureteral opening shows four or five red spots below it. Left urine, a few pus-cells and tubercle bacilli. Right kidney, urine entirely negative. Both worked at uniform rate. von Pirquet test strongly positive. Nephrectomy. Left kidney enlarged and on section shows many small tubercles. Gradually made a good recovery.

Case 11. Complaint, pain in right side. Male, 28, married, motorman. There is bone tuberculosis in the family history. Nine months ago while lifting timbers from a repair car, was taken with pain in right side. Next morning passed some blood in urine, also developed frequency. Was laid up for six weeks, urine became turbid and has not cleared up since. Frequency but not much pain. Urine cloudy, blood, pus and bacilli. Floor of the bladder shows tubercles, not ulcerated. Right kidney, urine dark, pus and clumps of bacilli. Left secreted twice as fast, also some bacilli.

Case 12. Complaint, frequent urination. Male, 22, single, mail clerk. Has never been sick. Three months ago noticed sharp burning pain after urination, also developed frequency and mild hematuria. Cystoscopy. Urine cloudy, pus and bacilli. Bladder irritable, capacity 3 ounces. Right kidney, albumin, 2 per cent., tubercle bacilli many. Left kidney, albumin, ½ per cent., bacilli few.

Case 13. Complaint, albuminuria. Female, 22, at home. Family history full of inflammatory rheumatism. Two years ago had tuberculous pleurisy. Recovered with tuberculin. Lately has been listless and languid; noticed cloudy urine two weeks ago, no frequency, pain or blood. There has been a steady loss in weight. Slender, undernourished girl. Urine cloudy, albumin 1.5 per cent., pus, colon bacilli and a few staphylococci, no tubercle bacilli.

Cystoscopy. Bladder shows no ulcers or tubercles. The separate urines, both contain albumin, a few granular casts, pus, no tubercle bacilli. Is gradually becoming worse in spite of tuberculin and rest. She also has a cloudy swelling of the superior maxillae.

Case 14. Complaint, pyuria. Female, 24, at home. Mother, two sisters and a brother treated for tuberculosis. Has been well. Congenital luxation of the hip. Also treated for consumption and cough which stopped with tuberculin. Has been troubled with frequency and tenseness for the past three months. Tubercle bacilli were found in the urine at that time. Bladder contracted, 3 ounce capacity. Walls thick, triangle edematous. Urine of left kidney full of pus and tubercle bacilli. Right ureteral opening frayed, surrounded with small ulcers, pus and bacilli.

Case 15. Complaint, pyuria. Female, 36, married, never pregnant. Pneumonia four years ago, a winter cough ever since. Has had cloudy urine for some time but never pain. Frequency day and night. Is thirty pounds under weight. Bladder showed a mild cystitis, with ulcerations around the left ureteral opening. No urine obtained but pus, colon bacilli, tubercle bacilli. Urine of right kidney was negative for pus and bacteria.

Case 16. Complaint, frequent, painful urination. Male, 18, school boy. History negative; been ailing for the past three months, tired, loss in weight, frequent urination and some blood. Better under treatment and rest in bed. Tuberculin test positive. Tall, slender, sickly-looking, temperature 99.2°, suppressed cough. Bladder contracted and irritable, hold [illegible] few ounces; irregular, fresh ulcers beyond the triangle. Left kidney, many pus-cels and tubercle bacilli. Right kidney also secreting bacilli.

Case 17. Complaint, pain over right kidney. Male, 23, pharmacy student. History negative. Two and a half years ago developed a cold which failed to clear up. Later tubercle bacilli were demonstrated in the sputum. Went to Arizona where he developed a pain in the small of his back and treated for lumbago. Pain was alleviated for a time but gradually grew worse, running down into Poupart's ligament, also into right hip and the outside of thigh. Examination showed tuberculous spine and lungs. Cystoscopy gave tubercle bacilli in the right kidney. Died four months later from pulmonary hemorrhage.

Case 18. Complaint, pain in region of the right kidney. Female, 43, housewife. Pain in the right side came on gradually, coming and going. Frequent urination developed, no blood. She was well nourished and enjoyed good health. Bladder showed a mild general cystitis and a group of small ulcers around the right ureteral opening, which was frayed and irregular. The urine of right kidney contained pus and bacilli. The left kidney was negative. Nephrectomy. Large right saccultaed organ. Excellent recovery.

Case 19. Complaint, cloudy urine. Male, 20, single, law student. History negative. Always been in the best of health. Four months ago developed frequent urination, urgency and pain with some blood. Large, well nourished boy, played on the university football team. Urine cloudy, shreds, pus, a few staphylococci and many tubercle bacilli. Bladder showed a diffuse cherry-red cystitis. There were large, rough, granular tubercles on the upper dome of the bladder. The urine of right kidney had albumin, many pus-cells, a few bacilli. The left negative except for albumin.

Case 20. Complaint, frequent urination. Male, 29, carpenter, married. History negative. Ill for the past three years. Frequency, passed chunks and blood. No pain to speak of, runs a mild fever. Urine very cloudy, full of pus and bacilli. Left epididymus, prostate and both kidneys tuberculous. A large prostatic abscess was drained and patient greatly improved.

In summing up the study of these twenty cases of renal tuberculosis, we are impressed with several very clear conditions. First, the uniform consistency with which the tubercle bacilli were demonstrated in the urine, being found in all but one case.

Second, hematuria that was noticed by the patient in 60 per cent. of the cases. It usually occurred early and was not associated with pain.

Third, that sex makes little difference, nine cases being females and eleven males.

Fourth, age at the time of consultation was 26 years, the youngest being 14 and oldest 43.

Fifth, 60 per cent. were demonstrated to be bilateral, that is, the tubercle bacillus was so found at the first catheterization. With such a finding there should be considerable hesitation before we resort to nephrectomy. Again, we should remember the origin of renal tuberculous infections and that, if one organ has become involved, it is reasonable to suppose that if the other one is not also infected, the possibility of breaking down later is great, as in cases 5 and 7.

Sixth, in 65 per cent. of these cases were found other tuberculous lesions and it is safe to assume that in the remaining ones there must have been tuberculous processes that escaped the physical examination.

SUMMARY OF CASES.

Case Number	Sex	Age	Hermaturia	Tubercles bacilli	Apparently Unilateral	Bilateral	Other tuberculous lesions	Family history of tuberculosis
1	male	16	0	+		+	lung	unknown
2	male	27	+	+	+		0	+
3	female	23	0	+	+		0	0
4	female	24	0	+		+	bone and pleura	0
5	female	14	0	+		+	lungs	+
6	male	41	+	+	+		0	unknown
7	male	24	+	+		+	lungs	0
8	female	21	0	+		+	tubes	0
9	male	32	+	+	+		0	+
10	female	34	0	+	+		0	0
11	male	28	+	+		+	bone	+
12	male	22	+	+		+	0	0
13	female	22	0	0		+	lungs and bone	0
14	female	24	0	+		+	lungs	+
15	female	36	0	+	+		lungs	0
16	male	18	+	+		+	0	0
17	male	23	0	+	+		lungs and spine	+
18	female	43	0	+	+		0	0
19	male	20	+	+	+		0	0
20	male	29	+	+		+	prostate	0

A FERMENTED MEDICINAL MILK.*

By A. Tilzer, Ph. G., M. D.

PORTLAND, ORE.

Kefir is as much foreign a term to the inhabitants of Russia proper and Western Europe as it is to us, yet as a dietetic beverage and therapeutic agent of no small import, it has been used abroad for at least half a century. Why the remedy was never popularized in America is a matter of speculation. It may have been the peculiar indifference of Americans to European products or it may have never been properly introduced. My main reasons for bringing up the subject are the numerous inquiries I have had lately from my European patients who were very much surprised not to find this their pet remedy, as it were, in Europe.

The beverage is prepared from a granular fungus, kefir, from which it derives its name and which was originally discovered in the Northern mountains of Caucasus, a Russian possession populated by a semi-nomadic race on the extreme southeastern border of Europe. The history and origin of the kefir grains are merely speculative. The native mountaineers zealously guarded the fungus for centuries from the Christian nations of Europe. And when at last it passed into the hands of civilized Europe, the only explanation obtainable from the natives as to its origin was wholly legendary.

The legend goes something like this: "In the golden age when the most high Allah personally conversed with a few chosen faithful Moslems, he sent to the righteous good people of the race they represented, as a token of his most venerable love, a food that would forever keep them from hunger." Another tradition circulated is that it was found in times immemorial on a bush tree on a certain sacred mountain at the very snow lined top, and still another that it was first found in the imperfectly cleaned hide milk-containers, which explanation appears very probable. The most probable and generally accepted theory is that offered by Dr. Tichomiroff, of Moscow, who declares it to be a modified, ordinary hay bacterium which found its way into the particles of caseine adhering to the folds of the natives' hide milk-containers. Then followed the slow, gradual assimilation of the bacterium to its new soil and then on again, by process of microbial life which took centuries to consummate, it evolved into its present form.

The food-drink, kefir, which is the subject of this effort is prepared from cow's milk with kefir grains as the fermenting, modifying agent and it is the most remarkable change the ferment performs in the milk that makes the finished product the valuable dietetic and therapeutic agent it is generally accepted to be. As the limited confines of this paper do not allow me to enlarge on the detailed processes of the fermentation, I will give a brief outline of its history, morphology, physiology and therapeutic status.

The use of fermented mare's milk antedates the Christian era, as the Greek historian, Herodotus, refers to it in his writings as a food of nomadic tribes. The history of the manufacture of kefir dates back to the time when attempts were being made in Russia to prepare from the more common and accessible cow's milk, a fermented drink, similar to koumiss, which is prepared from mare's milk. The processes of souring cow's milk were many, the principle being koumiss in the presence of lactic sugar or the ferment of beer. The first official recognition of fermented milk by the medical profession was made in 1867, when Dr. Stahlberg made a detailed report to the Paris Academy of Medicine on mare's koumiss and from that time various forms of fermented milk have been manufactured and used for forced feeding of the sick and convalescents, and experiments have proven that fermented milk was more assimilable than ordinary milk.

Kefir in its natural state, as it is imported to Russia from Caucasus, presents the appearance of very small, oval and spherical grains, conglomerated into larger grains, ranging from the size of a pea to five centimeters in diameter, in moistened condition. In dry state they are much smaller and easily disintegrate under pressure. On moistening the grains the water assumes a faint, yellow color while the kefir itself whitens, expands and becomes elastic, at all times, however, retaining a yellow color. Thrown into milk the grains of kefir expand in size and grow and, upon shaking of the vessel, break up into smaller grains which in their turn grow into larger ones. The milk is thus the soil on which they thrive and grow and it is this manifestation of life and growth in the milk that ferments it and brings about the finished drink, kefir.

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*Read before Portland City and County Medical Society, Portland, Ore., Feb. 4, 1914.

The first authentic report about kefir was given out by Dr. Dishoguine, in the year 1866, who sent to the medical society of Caucasus the grains of kefir, with the information that it is used by the mountaineers to prepare a particularly nutritious and medicinal drink. A year later Dr. Sipovitch sent a report to the same society, giving an extensive description of kefir grains and the real value of the finished article. Interest in it lagged, however, until 1877, when there appeared another essay by Dr. Shablowsky, who gave the first microscopic and macroscopic structure of the grains, their qualitative chemical composition, also the chemistry of the finished product. According to his statement, the composite parts of kefir were a distinct variety of elliptic cells and bacteria.

In 1881 the first scientific, botanical description of the grains appeared in a pamphlet by Dr. Kern. He made an exhaustive analysis of kefir and reported two microbes, the fermentative cells and a species of bacilli he named dispora Caucasica. The peculiarity of these bacteria, according to Kern, is manifested by the fact that they always form two spores, while bacilli in general have only one spore in each cell. This statement, however, was not substantiated by succeeding investigations. The average kefir grains consist of the above-mentioned bacteria in a state of colonial form of life, known in bacteriology as zoogloea, mixed with groups of yeast-cells.

The growth of the grains in milk is conditioned by the multiplication of both their morphologic elements. Bacteria multiply through division and formation of spores, while yeast-cells multiply by the process of budding. In order to study the component parts of the grains microscopically, Dr. Kern cultivated in various nutrient liquids particles of the ferment and established several conditions of their life. The experiments have shown that the ferment of kefir possesses the qualification to antagonize unfavorable conditions of life. This is a feature in a larger measure of the bacteria than the yeast-cells. The spores of the bacteria will thrive after being submerged two months in a solution of picric acid or 3 per cent. solution of chromic acid.

After Kern's investigation the literature on kefir grew quite extensively, both as to its analysis and its application clinically and dietically. The list of its enthusiasts is too long to enumerate. I shall confine myself to the most essential and principal investigations that were instrumental in placing kefir on a scientific basis and as a vital agent in medicine.

Before I proceed to describe the different methods of preparing the drink I deem it necessary to point out the changes that take place in the milk during its transformation into kefir and general conditions that influence the fermentation. The rapidity of conversion of sweet milk into finished kefir depends on the frequency of shaking the fermenting mixture, on the quantity and fineness of the grains used; also the temperature to which it is subjected. At a very low temperature, for example, the fermentation may not take place at all. Under proper temperature, which is about 60° C., the consecutive changes in the milk are generally as follows: The milk begins to assume a slightly sour taste and, as the acidity increases, it commences to thicken, becomes covered with foam and then emulsifies.

Upon standing the fermenting mixture separates into two strata which, however, unite into a uniform mass upon shaking. Upon continued fermentation the liquid becomes thinner, more acid and more saturated with carbonic acid gas. It appears that a considerable part of the fine, delicate casein which is suspended in the emulsion gradually becomes dissolved. Upon still further fermentation it turns into a semi-transparent watery liquid, in which state it remains for some time and does not become separated. At a lower temperature a less acid product is obtained, with a larger amount of carbonic acid gas and alcohol, while at a higher temperature the acidity increases with a decrease of both carbonic acid and alcohol.

Having pointed out the general changes which take place in the milk through the presence of kefir grains, I will describe the methods of preparation used both by the natives and us. The natives use exclusively vessels made of hides which they fill with milk, then throw in the grains, bind the orifice tightly and leave it to ferment at a moderate temperature, aiding the fermentation by frequent shaking. The vessel is generally left outside their cabins and it is customary for every passerby to kick or otherwise disturb the vessel to aid in its completion.

When the native wants to use some of the kefir he ties the vessel below the orifice at a distance he calculates to consume, unties at the top and pours off the released quantity. By so doing he prevents the escape of carbonic acid gas. The vessel is then refilled with milk for continued fermentation. This is the primitive method of the natives and rather an unsanitary one and, as the vessel made out of hides is difficult to keep clean, the result is a very sour and somewhat malodorous product. Of late quite a few natives recognize the disadvantage of such a method of preparation and are gradually adopting the use of specially made earthenware with long, narrow necks.

The method used in Europe in producing a perfectly finished article, after numerous experiments, is narrowed down to the following: The grains are previously soaked in warm water until they expand. They are then treated consecutively in five or six portions of fresh milk, about two or three hours in every change, until they become ready for use. The grains thus treated are mixed with milk at the rate of one tablespoonful of the grains to two glasses of milk (boiled preferred). The vessel, either glass or enameled, is left in a dark place slightly stoppered at a temperature of about 50° and frequently shaken. After from eight to twelve hours the mixture is strained through sterilized gauze into a clean vessel which is well stoppered and shaken every two or three hours, but not violently enough to cause the formation of butter.

The finished product is classified according to the duration of its fermentation, one-day kefir, two-day and three-day kefir. Kept on ice it may be preserved for a reasonable time. Freshly prepared kefir, however, is preferred. The kefir grains remaining on the strainer are carefully washed of the adhering particles of casein and are ready for further use.

The above-mentioned process is sometimes varied by using less of the grains to the same amount of milk and by allowing the grains to remain in the milk twice as long. If very fine grains are used the fermentation will commence sooner and thus shorten the process of preparation. This, however, is simply a question of calculation, the main process being the same.

A well prepared, two-day kefir presents the appearance and consistency of a creamy, effervescent, foaming liquid, slightly acid, with the taste and odor of sour cream. It must be homogeneous and with no particles of casein distinguishable to the tongue. Otherwise the kefir is thinner in consistency, more acid and contains more carbonic acid gas and should, therefore, be opened with care. As it is commonly used it is divided and known according to its strength as weak, medium and strong. A well prepared kefir is rich with foam which upon shaking of the bottle adheres permanently to the walls of the container, while a quickly disappearing foam indicates that the beverage is not finished.

As to the qualities of milk which are necessary and desirable for the preparation of the best possible article, it was established by Dr. I. Schmidt that freshly milked milk is not necessary. On the contrary, milk that has been kept several hours in the average house temperature is more desirable and the addition of a small quantity of bicarbonate of soda to make it slightly alkaline makes it still more preferable. He also discovered that cow's milk, upon standing for eight or nine hours in a room and being rendered alkaline to resemble the alkalinity of mother's milk is subject to a change in the correlation of the percentage of albumins. The quality of hemialbuminous matter is increased, while albumin and casein are diminished.

The physico-chemical changes produced in milk by the ferment or kefir grains are identical with the fermentation of koumiss. In both cases, under the influence of the microorganisms yeast-cells and bacteria, the following two processes take place: the splitting of sugar of milk into vinous spirits and lactic acid with the generation of carbonic acid gas, and a specific transformation of the albuminous corpuscles of milk, consisting of the separation of casein, the peptonization and solution of a quantity of albumins. Sugar of milk identical with cane sugar is not capable of alcoholic fermentation but under the influence of the yeast cells absorbs particles of water and transforms into grape sugar which easily decomposes.

Now a few words as to the influence access of oxygen exerts on the alcoholic fermentation. The latest views on the subject, based principally on the investigations of Rasmus and Hansen, differ somewhat from the laws laid down by Pasteur. The great scientist was of the opinion that fermentation was life without oxygen. At present, however, it is established that alcoholic fermentation thrives very satisfactorily, if the yeast cells have absorbed a sufficient quantity of oxygen and have grown and multiplied under its influence. Hence it is necessary to expose the vessel containing the fermenting liquid to air for about six to eight hours before it is transferred into airtight containers.

Generally speaking, the consecutive changes that take place during the process of fermentation are as follows: At first part of the milk sugar disappears, alcohol and lactic acid are generated, the casein separates and part of it becomes dissolved and a number of peptones heretofore not having been present appear.

The physiologic action of kefir depends, beside the normal ingredients of milk, on the additional ones acquired through fermentation and lactic acid, carbonic acid and alcohol. The action varies according to the strength of the beverage. As the physiologic action of sweet milk is well known, we will confine ourselves to the newly acquired agents and see what influence they exert on the human organism.

Lactic acid plays a most important part in gastric digestion. The acidity of the gastric juice is due to the muriatic acid it contains and which is the principal factor in the digestion of albumin; the next most important acid is lactic. Experiments of Dr. Langard have shown that even diluted lactic acid dissolves the casein of both woman's and mare's milk, but what really makes the lactic acid most valuable is that it precipitates the casein in the kefir in the form of soft, delicate flakes and by such action relieves the gastric juice from a part of its burden of precipitating the casein, which is the first act the gastric juice performs. For the good of the human organism, furthermore, it is best that casein is precipitated by lactic acid instead of the gastric juice, as the fine, delicate casein thus precipitated is much more easily assimilated than the lumps formed by the gastric juice ferment. Lactic acid is also decidedly diuretic and, last but not least, has proven deadly to the intestinal bacteria.

Its principal application in medicine is in convalescent cases but statistics place it as a remedial agency of such import that it is but fair to give it the widest publicity possible. To sum up, we have in kefir an easily digestible and acceptable to the stomach, rich, complete food, a most valuable dietetic adjunct to therapy and a pronounced enemy to pathogenic microbes of the gastrointestinal canal.

THE INTERNAL SECRETION OF THE SEXUAL GLANDS.

By C. E. Eaton, M. D.
SEATTLE, WASH.

The internal secretion of the sexual glands has recently been given a good deal of study by prominent men and the results obtained justify one in hoping that another discovery may be made exceeding in practical value any knowledge we have yet obtained of the ductless glands. This internal secretion is capable of changing the physical and mental condition of an individual. This is a definitely established fact as shown by the experiment of removing the sexual glands from a young animal and transplanting organs from the opposite sex, the result being the development of a complete change both physical and psychosexual. In other words, a young female may be made to develop into an individual having all the characteristics of the male and a young virgin female may, by stimulation of the ovaries, be made to develop hypertrophy of the uterus, enlargement of the breasts and development of milk, all due to an internal secretion.

The greatest possibility along this line of investigation seems to lie in the fact that neoplasms may be greatly influenced by this internal secretion. Cancer in a mouse may be made to grow much more rapidly by injection of extract from the sexual glands. The blood-serum of cancer patients shows some peculiarities believed to be found in no other condition but pregnancy. There are well authenticated cases in which decidual tissue during pregnancy has developed in remote organs as well as the uterus, showing that the development of the placenta is but one of the local manifestations of a general condition, and this is brought about and controlled by the secretion of the ovary.

To show the wonderful influence on the whole body exerted by the ovary, it is necessary to consider that as soon as pregnancy develops the function of the ovary changes completely and the resulting change in its internal secretion affects the whole body, brings about proliferation of cells in certain organs, as in the breast and uterus, this proliferation having and accomplishing a definite purpose and subsiding when this is accomplished.

Possibly a comparison between a normal placenta and a carcinoma may be made because of the fact that they both begin as an unusual proliferation of endothelial cells, in one case being under control and having a new growth with a function, and in the other a neoplasm, the growth of which cannot be checked. In the case of the placenta it is very probably caused by an internal secretion from the ovary, and in the carcinoma there are good reasons for believing that it may be caused by the lack of, or a perversion of secretion of, the ovary and this in turn caused by some interference with the activity of organs whose function is the fulfillment of the most dominant instinct of all forms of life, that of reproduction.

The different opinions held by prominent men are rather instructive. Dr. Murphy, of Chicago, referring to breast cancer, says: "I am not sure that these patients would not live longer as a total class if they were not operated on." Also, in referring to Professor Bastianelli, of Rome, "according to his own statistics, he thinks the final mortality approximates 100 per cent, and that confirms the position we have taken for so long a time. I believe the final results in carcinoma have not been very materially improved in the last quarter of the century," Dr. Rodman, of Philadelphia, also speaking in Murphy's Clinic and referring to results of carcinoma of the breast, says, "They have improved decade by decade since Moon's teachings in 1867," and reports statistics of 80 per cent. cures. Also, one thinks the disease a purely local one, and the other considers it a local manifestation of a toxemia.

These conflicting statements from men of wide experience will, I believe, justify a person in coming to his own conclusions. My own small experience in China and Japan, also my more extensive experience with the French-Canadian habitant is that, when sexual conditions are allowed to exist about as nature intended them to be, malignancy is practically unknown; also, that in the rare cases in which malignancy develops in the female whose sexual activities have not been restrained, possibly the late mating in life or the sexual anesthesia or indifference of one or both parents may have transmitted to this individual the unbalance among the forces controlling cell proliferation which is certain at some time to cause the local loss of control, resulting in the blind proliferation in breast, uterus or elsewhere, and cancer.

There are many instances in which a family predisposition to malignancy is very pronounced and some authorities claim that these conditions are associated with reduced fertility. In other words, the resistance to cancer is a natural asset in the fortifications of the body. The absence of this protective power means susceptibility to cancer and is in some way associated with the internal secretions of reproductive organs. Recent investigations show that it is very probable that the spermatozoa have, after entering the female, functions other than that of fertilizing the ovum and this function may be of great importance to the individual and her offspring.

According to good authority on animal experiments, by inoculating with cancer cells the removal of the testes in some way renders the animal a more receptive host, as seen by the increased number of "takes" of the tumors and their more rapid growth. The ovaries under certain stimuli will produce an internal secretion entirely different from that produced by a different stimulus, and it would seem possible that women who have always been indifferent to sexual excitement may never have experienced stimuli necessary for the development of certain internal secretions in the ovary which are necessary for the whole body, and that this deficiency may mean susceptibility to cancer. Comparing this possibility with the known fact that removal of sexual glands in animals makes them much more susceptible to inoculation with cancer, would it not seem possible that this menace to civilization with its rapidly increasing mortality may in some way be associated with sexual conditions? Other facts add to this possibility, and one which has impressed me greatly is the comparative freedom from cancer among women who have led an unrestrained sexual life. One prominent English investigator, after many years' study of the prostitutes of London, England, finds that cancer among them is extremely rare.

Absence of certain internal secretions from certain glands will cause marked mental and nervous abnormalities, as is so positively shown in cretinism. Also, there are varying degrees of deficiency in cases of this sort, and possibly an individual may suffer physically and mentally in varying degrees through lack of sufficient secretion from some of the secreting cells of the genital organs. Some of Professor Freud's beliefs may be explained in this way. He believes that psychoneurotic illnesses never occur with a perfectly normal sexual life.

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon. Washington, Idaho and Utah.
Devoted to the Interests of the Medical Profession of the Pacific Northwest.

Editorial Office, 719-22 Cobb Building, Seattle, Wash.

JULY, 1914.

EDITORIAL

ASSOCIATION MEETINGS.

Oregon State Medical Association will meet at Portland, Sept. 10-11.

Washington State Medical Association will meet at North Yakima, Sept. 21-23.

Utah State Medical Association will meet at Salt Lake City, Sept. 29-30.

Idaho State Medical Association will meets at Boise, Oct. 8-9.

SHALL THE AMERICAN MEDICAL ASSOCIATION BE PERMANENTLY LOCATED IN THE CAPITAL OF OUR NATION?

Considering the imbroglio brought about by the cliques of Chicago in our association, the uncertainty of its corporate existence in Illinois and its headquarters in a printing office in that city, it is now high time that something be done to afford a home and give the members a dignified and comfortable meeting place and institute a legal standing for the association. Such may be obtained in the District of Columbia, Washington being of as convenient access as any or all of our usual meeting places, in which every citizen of every state has equal interest and ownership.

We are tired of crowded hotel accommodations such as of Atlantic City, with nothing to attract the scientific mind, in which the sections have to meet in inconvenient places as hotel rooms, churches and saloon annexes, where the board walk is so hot and so hard and the gimcracks of the guineas and the cheap booths have spoiled the natural attractions of a hot and sandy beach. Why should we lend ourselves to the exploitation of a summer resort for the middle classes of Philadelphia? Let us follow the example of our youngest sister, the American College of Surgeons, get away from cliques and cities of pleasure or of profit, establish our headquarters in Washington, build a million dollar monumental meeting place, where all, even to 50,000 at a time, may meet at once in suitable section halls. Why not with governmental support? The building could be occupied by the Surgeon-General's office, the medical museum and the offices of the Secretary of Public Health. Indeed, the aid of all America would be freely given us for this worthy undertaking. Let us concentrate our energies, get together, have our servants—our secretary, editor and trustees—all under one roof and that where, next to Congress, we would be a close-knitted organization, a factor in political life and the dominant power as concerns all considerations of the health of the nation, thus aiding more greatly than we now do in the perfect physical development and conservation of the individual citizen.

H. V. W.

HIGH SURGICAL STANDARDS.

The American College of Surgeons met in Philadelphia, June 22, for its second annual convention. This group of surgeons is mostly composed of men whose qualifications are those of position achievement and they are selected after due examination into their fitness by the powers at Chicago, after long waiting and careful examination into their fitness for the practice of surgery. The vast number of applications, some 15,000, are being most carefully considered and some require a great amount of corresponding, necessitating a delay of many months before final action thereon may be taken. It seems that a single objection from within or without the body leads to strict inquiry, and the greater the man the more is the envy and the more there are to criticize his smallest acts. What would pass without comment in the village practitioner is billed in black letters in the report of the career of the city surgeon and the latter's good deeds as well as his minor mistakes are magnified and proclaimed forth as with a megaphone. The Board of Regents state that the applicant hereafter will not only have to furnish references concerning his skill and experience in surgery, but will also be required to submit a complete record of fifty consecutive cases of operations performed by himself—merely a guarantee of some service and of skillful attainment. Eleven hundred new members were admitted to the college and yet there are said to be 3,800 applicants whose names have not yet been reached and who are pursuing the policy of watchful, or shall we say, wistful waiting.

H. V. W.

MEDICAL PRACTICE ACT SUSTAINED.

For the second time the Washington Supreme Court has affirmed the constitutionality of the medical practice act. On a former occasion such a decision was given on the appeal of a chiropractor from the decision of the Superior Court, convicting him of practising without a license. In the present instance a drugless healer of Seattle, who made the blind see, the deaf hear and the lame walk by the laying on of hands, as well as curing cancer, tuberculosis and other incurable diseases, was convicted in the justice court for practising without a license and fined $100 and costs. On appeal to the Superior Court this conviction was sustained, the judge declaring it to be the right and duty of the state to protect its people from humbugs. On appeal from this decision to the Supreme Court last month the latter affirmed the previous decision of the Superior Court. This result provides one more weapon for combating the illegal practitioners of the state. The drugless healers of various kinds seem to consider themselves immune to the provisions of the medical practice act, but the courts have consistently classed them among those who treat the sick and they must consequently furnish evidence of a knowledge of the principles of the healing art before they can legally pose as practitioners. The State Examining Board has recently exercised great activity in prosecuting illegal practitioners in several cities, obtaining a gratifying number of convictions. This decision will materially aid in their efforts along this line. It is the desire of the board that physicians of the state inform them concerning illegal practitioners in their vicinity, so that proper legal action can be taken to eliminate their pernicious activities.

THE SEATTLE SCHOOL CLINIC.

A medical clinic has been established by the Seattle school board which possesses some features of so unique a character as to command the attention of residents of other cities having at heart the welfare of their school children. Previous to the present year the inspection of schools was under the control of the board of health which employed a certain number of physicians periodically to visit the schools for examination of the pupils, their work being supplemented by the services of school nurses. Several months ago Dr. Ira C. Brown was engaged as the school medical inspector. Under his direction a certain number of nurses devote their whole time to the inspection and visitation of the school children, each having a certain number of schools under her jurisdiction. They have been trained and have become expert in the diagnosis of diseases of the nose and mouth and contagious diseases. A suitable case being recognized, the patient is referred to the clinic at the Central school, the nurse at the same time visiting the home and making an extended report as to the social and economic condition of the family of the pupil. At the clinic the patient receives a complete physical examination at the hands of a corps of physicians who contribute their services to this work. A diagnosis having been made, the pupil is sent home with a card requesting the parents to have him attended by their physician or dentist, as the case may demand, the latter being requested to report the results of their treatment to the medical inspector. In case the family are unable to pay for these services, the child is treated in the clinic. All patients are charged a small fee, ranging from a fraction of a dollar for the filling of a tooth to a few dollars for surgical operations, these fees being totally inadequate for ordinary professional services but, thus obtained, being devoted to the maintenance of the clinic. While there has been some criticism of this clinic on the part of the profession of the city, it has in reality proven an advantage rather than a detriment to them by reason of the fact that many parents have thus been led to bring their children for needed medical or dental attention which otherwise would have been neglected. During the few months that the clinic has been in operation it has demonstrated its usefulness in inspiring among the parents a quickened interest in the physical needs of their children, and promises increased activity along these lines for the future, which will unquestionably result in the improved physical and mental condition of the present generation of school children.

THE NATIONAL ASSOCIATION FOR THE PREVENTION AND RELIEF OF TUBERCULOSIS.

The next annual meeting of this association will be held in Seattle in the summer of 1915. The fact that this meeting is set for the State of Washington is practically due to the efforts of Miss Bethesda I. Beals, executive secretary of the Washington Association for the Prevention and

Relief of Tuberculosis. The selection of Seattle for this meeting is of note, because the National Association has rarely held its meetings elsewhere than in the City of Washington. This gathering will bring together the leading workers of this country whose efforts are directed to the suppression of tuberculosis. It will be of special value to the antituberculosis movement of the Pacific Northwest and will doubtless have an important influence in advancing the work in this section.

MEDICAL NOTES

OREGON.

University of Oregon Alumni Association. The annual meeting of the Alumni Association of the Medical Department of the University of Oregon was held in Portland, June 1-3. It consisted of clinics, papers, conferences and postgraduate work. A banquet was held the evening of the 2d. The program was of a high order and all the sessions were well attended. The following officers were elected for the ensuing year: President, J. P. Tamiesie, Portland; Vice-Presidents, E. A. Sommer, D. H. Rand and Kitty Plummer, Portland; R. E. Ringo, Pendleton; Treasurer, Belle C. Rinehart Ferguson, Portland; Secretary, A. G. Bettman. Portland.

University of Oregon Commencement. The graduation exercises of the Medical Department of the University of Oregon were held last month in the Auditorium of the Lincoln High school. The graduating class of twenty-six was addressed by Dr. K A. J. Mackenzie and W. W. Cotton.

Milk Station for Portland. As the result of the efforts of the Visiting Nurse Association, Portland is to have a modified milk station. The city authorities, several physicians, dairymen and others interested in humanitarian movements are cooperating and the station will be conducted along the lines of many similar stations in eastern cities. The milk will be modified according to formulae of the physicians and dispensed to needy cases at a nominal charge. The plan will be tried out during the warm summer months and if found practicable will no doubt be continued throughout the year.

Trachoma Among School Children. Owing to the fact that large numbers of pupils in the rural schools of Oregon are suffering from trachoma, the State Board of Health is taking active measures to stamp out the disease. In cases of children unable to pay for regular medical attendance the Board of Health is furnishing treatment and the counties in which the cases occur are paying whatever hospital fees are necessary. In addition to the white children affected, approximately 50 per cent. of the Indians in the Reservations are reported afflicted with this disease.

Hospital Appointees. Drs. R. R. Hamilton and E. V. Morrow, of Klamath Falls, have been appointed by the Government to take charge of the hospital at Seward, Alaska, which is to be operated in connection with the government railways.

Nurses' Training School. Plans have been submitted for a three-story nurses' training school building to be erected by the Mercy Hospital, Eugene. The building will be of brick or concrete, containing 45 rooms and will cost approximately $15,000.

St. Vincent's Nurses. Sixteen nurses were graduated from the St. Vincent's Training School for Nurses in Portland. The graduating class was addressed by Dr. J. F. Bell and Archbishop Christie.

Good Samaritan Training School. The Training School for Nurses of the Good Samaritan Hospital, of Portland, graduated a class of 30 nurses.

Dr. M. G. Howard, who has recently graduated from the Medical Department of the University of Oregon, will locate in Brownsville.

Dr. J. W. Ashford, of Canyon City, suffered a severe sprain of the knee when the carriage in which he was riding was overturned.

Dr. F. E. Smith, formerly superintendent of the State Institute for the Feeble Minded, has returned from a postgraduate course abroad and will practise in Portland.

Dr. L. M. Lehrbach, who has been practising in Junction City for the last seven years, has moved to Roseburg.

Dr. V. B. Gregory has opened a new hospital in Joseph.

WASHINGTON.

Scarlet Fever at Ellensburg. The scarlet fever epidemic in Ellensburg is finally under control. The public schools were closed for about two weeks and all other gatherings of children were prohibited.

Results of Rabies. The refusal of the City Council of Seattle to inconvenience the dogs by passing a muzzling ordinance is finally bearing the fruit which was to be expected. Reports are being received from the rural districts of horses, cattle and other animals dying of rabies and the authorities of Everett have been roused to action by the discovery of several rabid dogs in that city which are supposed to have been infected by Seattle animals.

Providence Training School. The commencement exercises of the Training School of Providence Hospital, Seattle, were held in the latter part of May. The graduating class of 26 was addressed by Bishop O'Dea and Drs. Raymond, Richter and W. A. Shannon.

Seattle General Training School. The graduating exercises of the Training School of the Seattle General Hospital were held last month in the Auditorium of the new Y. W. C. A. building. The graduating class of 17 was addressed by Dr. F. S. Bourns and Rev. Hugh Elmer Brown.

St. Joseph's Training School. A graduating class consisting of four members received their diplomas last month from the Nurses' Training School of the St. Joseph's Hospital in Vancouver.

Washington Nurses' Association. The following officers of the Washington State Graduate Nurses' Association were elected at the recent meeting: Mrs. Edna Robinson, president; Miss Alice M. Claude, vice-president; Miss Catherine Major, secretary; Miss Belle Frazier, assistant secretary; Mrs. E. B. Cummings, treasurer.

Chief Surgeon, N. G. W. Dr. F. M. Carroll, of Seattle, who for several years has been major in the Medical Corp, N. G. W., has been promoted to the post of chief surgeon, and Dr. O. R. Austin, of Aberdeen, succeeds him as major.

Homeopathic Medical Society. The following officers were elected at the closing session of the State Homeopathic Medical Society, held in Seattle last month: Dr. E. E. Beckett, president; Dr. W. D. Larkin, first vice-president; Dr. F. G. Brooks, second vice-president; Dr. E. M. Carney, secretary; Dr. A. E. Goldsmith, treasurer.

White Shield Home. A building site for the new White Shield Home in Tacoma has been purchased and the construction of a $15,000 building has been begun. There will be a maternity hospital to accommodate 20 patients and additional rooms for at least 20 other unfortunate girls and women.

A Patriotic Honor. Dr. S. J. Holmes, of Seattle, has been elected a member of the Board of Trustees of the National Society of the Sons of the American Revolution. Dr. Holmes was presented with a gavel made from a cherry tree grown at the birthplace of George Washington.

Dr. W. C. Cox, of Everett, received painful but not serious injuries when he steered his automobile into a telegraph pole to avoid a collision with another machine which had turned in the wrong direction.

Dr. W. F. West, of Everett, has left for a vacation of three months, during which he will visit a number of the important medical centers of England and the eastern states.

The Soap Lake Sanatorium has been purchased by Dr. P. C. Mikkelson and George Chinn for $85,000.

Dr. J. W. Summers, of Walla Walla, has returned from a trip abroad, during which he took up special postgraduate work.

Dr. B. E. Hoye, of Auburn, received a Colles fracture while cranking his automobile.

Dr. W. P. Baker has left Seattle and will practise in Union City.

Dr. J. W. Stevenson has located in West Seattle.

Dr. W. C. Trowbridge has located in Goldendale.

IDAHO.

U. S. Indian Service. A meeting of the physicians of the United States Indian Service was held June 23, 24, 25, at Lapwai. Special attention was given to the discussion of tuberculosis and the meeting was attended by physicians from Washington, Oregon, Idaho, Arizona and Washington, D. C.

Dr. E. E. Maxey, of Boise, has been elected a member of the American College of Surgeons. The degree is to be conferred at Philadelphia, July 22.

OBITUARIES.

Dr. B. H. Roark, of Spokane, Wash., was accidentally killed May 30, while driving his automobile which was struck by a train of the Spokane and Inland Empire Railway, near Coeur d'Alene. He was on the way for a fishing expedition with a friend who was also killed. He was born in Lebanon, Ind., in 1877. He studied for three years at Indiana University, later graduating from Chicago University. He studied medicine at Rush Medical College, graduating in 1903. After spending a year in the Milwaukee Hospital, he began practice at Jamestown, Ind. In 1907 he came to Spokane and organized the Emergency Hospital, serving for two years as its surgeon. Then he entered private practice at the same time serving as county physician, which office he filled to the time of his death. During the Spanish-American War he served as a sergeant.

Dr. Edward M. Shipp died June 17 at the Puget Sound Navy Yard, Bremerton, Wash., during an operation for an abscess in his throat. He was born in Virginia, in 1866, and was appointed to the medical corps of the navy in 1893. He specialized in diseases of the eye, ear, nose and throat and was considered an authority on these diseases. At the time of his death he was in command of the hospital at the navy yard. Before coming West he had served for two years as instructor at the Naval Medical School, Washington, D. C., and for the same period at the New York and Philadelphia Navy Yards. Before coming to Bremerton he had served for two years in command of the Naval Hospital at Yokohama, Japan. He was of an exceedingly pleasant personality and was popular among all his acquaintances.

Dr. Thaddeus J. Dean died at Seattle, Wash., May 23. He was born at Cliffy Falls Farm, Ind., in 1836. He served throughout the war as surgeon. For nearly twenty-five years he was professor of obstetrics at Franklin Homeopathic College, St. Louis, Mo. He resided in Seattle for over twenty years.

Salvarsan in Nervous Syphilis. 1. The treatment of syphilitic nervous diseases without the Wassermann reaction and spinal fluid analysis is guess-work.

2. The nervous system may be the site of attack within a few weeks after the initial lesion appears.

3. The earlier antisyphilitic treatment is instituted in syphilitic nervous diseases, the greater the probability of complete recovery.

4. Salvarsan is the most potent remedy in our armamentarium in the treatment of syphilis of the nervous system.

5. Salvarsan is not all-sufficient.

—Craig and Collins, Journ. A. M. A., June 20, 1914.

REPORTS OF SOCIETY MEETINGS

OREGON.

ALUMNI ASSOCIATION OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF OREGON.

In connection with the meeting of the Alumni Association of the Medical Department of the University of Oregon, held at Portland, June 1-3, the following program of papers and clinics was presented:

	MONDAY, JUNE 1	TUESDAY, JUNE 2.	WEDNESDAY, JUNE 3
8.30 to 10:30 A. M. at the College	Dr. J. M. Connelly Post-Graduate Work at the College—Blood Analysis and its interpretation. R. L. Benson, Pathology.	J. M. Connelly Post-Graduate work at the College—Urine Analysis and its interpretation. R. L. Benson, Pathology.	Dr. J. M. Connelly Post-Graduate work at the College—Gastric Analysis and its interpretation.
10:30 to 12:30 Clinics, Medical and Surgical at the Hospitals	1. J. B. Bilderback; Children's Diseases. 2. E. A. Sommer, Nail Treatment of Fracture of the Hip. 3. O. S. Binswanger; Medical. Further announcements each day.	1. Otis F. Akin, Orthopedic; 2. Wm. House; Nervous diseases. 3. H. F. Ong, Surgical. 4. G. F. Wilson; Surgical. 5. E. J. Labbe; Children's Diseases.	1. J. J. Sellwood, Surgical. 2. K. A. J. Mackenzie, Surgical. 3. H. G. Parker, Skin. 4. R. C. Matson; Demonstration of artificial pneumothorax. 5. Sherman E. Wright.
1:30 to 5:30 Papers and Conferences at the College	1. J. G. Abele; Treatment of the Cigarette Habit with Silver Nitrate. 2. J. H. Bristow; Cancer of the Breast. 3. E. A. Sommer; Pericardial Surgery. 4. R. L. Gillespie; The Treatment of Drug Addictions. 5. G. N. Pease; Conference, Surgical Emergencies. 6. Geo. B. Story; Conference, Recent advances in obstetrical practise.	1. Calvin S. White: The Doctor of Medicine. 2. L. F. Griffith. The Treatment of Acute Insanities. 3. Marr Bisaillon; Practical remarks on the diagnosis of Tuberculosis from the standpoint of the general practitioner. 4. Wm. House; Conference, The Early Recognition of Insanity. 5. E. F. Tucker, Conference, Sequelae of Appendicitis.	1. Clayton S. Seamann; Affections of the Eye caused by Sinus Infections. 2. T. C. Humphrey; Hospital Associations. 3. A. E. Tamiesie; Psychosis Associated with the Menopause. 4. Thos. W. Ross; The value of posterior irrigation—urethroscopy. 5. J. F. Bell, Conference, Pneumonia.
8:00 at the College	1. R. C. Matson; Artificial Pneumothorax Stereopticon. 2. R. C. Walker and J. P. Tamiesie; X-Ray Symposium with demonstrations and interpretations.	Business meeting and Banquet, Multnomah Hotel, at 6:30. Business Dress. Election of Officers.	Graduating Exercises at Lincoln High School, Park and Market Streets, 8:00 P. M.

EASTERN OREGON DISTRICT MEDICAL SOCIETY.

The thirteenth annual meeting of the Eastern Oregon District Medical Society was held at the Eastern Oregon Branch Asylum, Pendleton, Ore., June 23, 1914.

The following program was presented:

PROGRAM

9:00 A. M.

Called to Order by the President................................M. K. Hall, La Grande, Oregon

Invocation .... The Very Rev. Chas. A. Hodshire, Pendleton, Ore

Address of Welcome .... I. U. Temple, President Pendleton and Umatilla County Medical Society, Pendleton, Ore.

Response............N. E. Winnard, Heppner, Ore.

Address of the President, M. K. Hall, La Grande, Oregon.

Paranoia, Clinical Lecture—(Material furnished by the institution)......................... W. D. McNary, Superintendent Eastern Oregon Branch Asylum, Pendleton, Ore.

Mesenteric Cysts—(Report of case with specimen)......Leo. W. Chilton, Canyon City, Ore.

Discussion Opened by Jacob Prinzing, Ontario, Ore.

1:30 P. M.

Meeting of the Board of Censors.

Business Session.

Some Observations in an Obstetrical Practice.. ....William Lockwood Parker, Baker, Ore.

Discussion Opened by R. E. Ringo, Pendleton, Ore.

Intestinal Stasis—(A review of four years' personal experience with Lane's Short Circuit Operation and the use of Liquid Parafine)................................A. E. Rocky, Portland Ore.

Discussion Opened by E. O. Parker, Pendleton, Ore.

General Paresis, Clinical Lecture—(Material furnished by the institution)...................... A. E. Tamiesie, Resident Physician of the Eastern Oregon Branch Asylum, Pendleton, Ore.

Adjournment.

WASHINGTON.

CLALLAM COUNTY MEDICAL SOCIETY.

Pres., D. H. Craig, M. D.; Sec. W. W. Taylor, M. D.

The regular monthly meeting of the Clallam County Medical Society was held in the Town Hall, Sequim, Wash., Jan. 16, 1914. Meeting was called to order by President Daniel Craig. Minutes of previous meeting were approved as read.

A motion was made to repeal the county society ruling that members shall not advertise by means of cards in the public press, but after some discussion the motion was withdrawn and the ruling let stand.

Dr. Wm. C. Speidel, of Seattle, was present and read a very interesting paper on, "The Direct Transfusion of Blood."

KING COUNTY MEDICAL SOCIETY.

Pres., D. W. Palmer, M. D.; Sec., G. W. Swift, M. D.

The regular semi-monthly meeting of the King County Medical Society was held June 1, 1914. Meeting was called to order by President Don H. Palmer, about 73 members being presnet. Minutes of the previous meeting were read and approved.

A letter from Miss Anna Hartnagel was read thanking the members of the society for their token of affection and esteem in memory of her brother, Dr. Louis H. Redon.

Clinical Case.

Pernicious Anemia Cured by Transfusion of Blood. Reported by E. P. Fick.

Papers.

Report on the Charter Revision Commission, by J. B. Eagleson, who briefly reviewed the new proposed charter.

Moved by P. W. Willis that the Board of Trustees endorse the charter. Dr. Horsfall questioned the advisability of the society taking an active part in this matter.

Walter Kelton maintained there could be an honest division of opinion in regard to this proposed charter and moved a substitute motion that the King County Medical Society keep out of politics.

J. H. Lyons had read the charter and was convinced it is not what the city of Seattle wants. He did not believe the society should interfere in politics.

J. C. Moore moved that the matter be referred to the Board of Trustees and returned to the society at the next meeting which was carried.

Medical Defense. By Mr. J. N. Roberts, who presented the policies of casualty defense insurance, explaining how the medical profession could be adequately protected, reviewed attempts at mutual insurance, advising against measures tending to create an impression of coercion or trust-like combinations amongst the members of our profession He explained how a defense company could maintain defense for physicians, how the cost was great and the profit small, why policies were raised and advised the doctors still to carry them.

In discussion, H. E. Allen stated he had been a goat and carried several policies but after listening to Mr. Roberts would be glad to accept his advice and secure a $10,000 policy in one company.

H. V. Würdemann discussed the workman's compensation act. In discussing the question of malpractice and defense insurance he stated that malpractice suits against physicians would be greatly diminished were the existing laws enforced, including the taking of cases on contingent fees by lawyers.

P. W. Willis stated he had not joined the state medical insurance because his lawyer had advised against it. He has $10,000 insurance in one company at $37.50 a year and believes it was the only way to have protection.

C. H. Thomson stated he had made exhaustive study of insurance in the light of a medical man. His observations were based on a desire to get what was best for doctors, not lawyers. He believed he could demonstrate that a mutual insurance was the best, safest and cheapest. The state society has established such a plan and already hundreds are in and more coming each day. They have already defended several cases and every legal representative of other companies is glad to avail himself of this work except one and that is Mr. Roberts. Twenty states now have such insurance and have found a marked increase in efficiency. The cost is not great to the association because no exorbitant legal fees are paid. The reason why the companies are not making money is because of such fees and other useless expenditures.

J. C. Moore stated his experience with the Fidelity insurance was not pleasant. The slightest technicality would be used to throw you down. He believed in the new state defense insurance and wanted all to join.

Mr. Congdon, legal representative of the state society insurance, spoke of his work. His review of the plan was clear.

F. L. Horsfall made an effective plea for physisians' mutual support of each other.

F. P. Pratt signified his desire to join the state society insurance.

Dr. West spoke of mutual work among physicians.

J. H. Snively stated that a clear review of the cases of malpractice would be beneficial to all.

Drs. Samuels, Hiram Smith, Bowles and Spaulding were elected to membership.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Modern Surgery: General and Operative. By J. Chalmers DaCosta, M. D., Samuel D. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia, Pa. Seventh Edition, Revised, Enlarged and Reset. Octavo of 1515 pages, with 1085 illustrations, some of them in colors. Cloth,

$6.00 net; Half Morocco, $7.50 net. Philadelphia and London: W. B. Saunders Company, 1914.

DaCosta's textbook in surgery corresponds to Osler's in medicine, although not possessing the same style. It is four years since the last edition of DaCosta appeared. The amount of new work during this period in operative surgery has been enormous, and it is indeed an Herculean task to make the book represent the accepted best in surgery of the present day and minute. The author quotes freely and verbatim from the masters. There is much new matter in orthopedic surgery, Röntgenology, genito-urinary surgery, tracheobronchoscopy and esophagoscopy by specialists in these subjects. It would seem to the reviewer that perhaps DaCosta does not wholly reflect the latest ideas in operative surgery on the gallbladder, stomach and prostate. The tendency to remove the gallbladder in most cases of cholecystitis, on account of the frequent recurrences after cholecystostomy; the dictum that ulcer should be treated in other ways than by simple gastroenterostomy, as by excision, cauterization, folding in the ulcer, and obstruction of the pylorus in duodenal ulcer; and the general preference for the suprapubic route in prostatectomy, by reason of less danger of incontinence, etc., are not brought out by DaCosta. However, the book is not primarily on operative surgery and one should not judge it on that basis. We cannot but sympathize with the author who frankly states in the preface that if he did the conventional thing he would state how many copies had been sold in previous editions, express the demands of the public for a new edition, give a list of the attractive novelties in the present volume, and then hail it as the superior to all of its predecessors. But he says he will write no more such prefaces and, having worked long and earnestly, a sense of disenchantment and a host of misgivings have come upon him and no one can be more conscious than he that there are defects in the book. Let us encourage him with the statement that this is certainly one of the best, if not the best, single volume textbooks of surgery in the English language. WINSLOW.

Diseases of the Heart. By John Cowan, D. Sc., M. D., F. R. F. P. S., Professor of Medicine, Anderson's College Medical School, Physican, Royal Infirmary, etc. Octavo 458 pages, with 199 illustrations. Cloth, $4.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

During the last ten years great advances have been made in our knowledge of the disease of the heart and arteries, new methods of histologic technic have shown lesions heretofore unappreciated. The various instruments of precision, as the blood-pressure apparatus, the polygraph and the electro-cardiograph, together with x-rays, have helped us considerably, and the old methods of diagnosis, prognosis and treatment have given way to a more rational practice. Ballantyne has devoted a section on the ocular manifestations of the blood-vessel diseases, and the well-known W. T. Ritchie has devoted one on the electro-cardiograph. A new section not found in textbooks is that devoted to cardiac irregularities, which is so essential in our present-day practice, such as auricular fibrillation, coupled rythm, extra-systoles, etc. For one who is interested in a modern conception of cardiac disease this book is to be recommended. FICK.

Arteriosclerosis. A consideration of the Prolongation of Life and Efficiency After Forty. By Louis Fangeres Bishop, A. M., M. D., Clinical Professor of Heart and Circulatory Diseases, Fordham View School of Medicine, New York, etc. 383 pages; price $3.50. Oxford University Press, London and New York, 1914.

The author emphasizes autointoxication as the leading etiologic factor in arteriosclerosis and the free protein diet in its treatment. He points out the importance of recognizing chronic kidney disease and circulatory brain disease as parts of arteriosclerosis. He shows that it is really a disease of the cells of the whole body and a toxic disease of protein origin. He makes the startling statement that in adults 40 per cent. by weight of the contents of the rectum is bacteria. The chapter on blood-pressure is interesting although bringing out nothing new. Contrary to the generally accepted teaching, he does not find that digitalis is contraindicated in high blood-pressure and advocates its use in selected cases in large doses until the heart becomes digitalized. He shows that alcohol may cause arteriosclerosis when used with food by supplying heat to the body and lessening the consumption of food. Thus it acts, in effect, as so much additional food. While he states that tobacco is not a direct cause of arteriosclerosis, yet it will increase the blood-pressure and should be strictly prohibited in patients suffering from the disease in the slightest degree. The chapter on diet alone is worth the price of the book and should be read by every practitioner. SHANNON.

Treatment of Neurasthenia. By Dr. Paul Hartenberg, Translated by Ernest Playfair, M. B., M. R. C. P. 283 pages; price $2.00. Oxford University Press, London and 35 West Thirty-second Street, New York.

This little book will be especially interesting to the general practitioner to whom nervous affections are usually very annoying. The author lays especial stress upon those cases that should and should not be termed neurasthenia. As that classification has been used for many years as a blanket diagnosis to cover a multitude of symptoms, this edition should prove interesting reading to those who would care to make the distinction. To the mind of the reviewer the differential diagnosis between neurasthenia and hysteria is not clearly shown, but all other matters are well described. Especial attention of the reader is called to the writer's views on the use of strychnin in these conditions, a fact which we heartily endorse.

SMITH.

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State Board Examinations, Questions and Answers of the United States and Canada. Fourth Edition. Cloth, 812 pages. Wm. Wood & Co., New York. $3.00.

State Board Questions and Answers. By R. Max Goepp, M. D., Professor of Clinical Medicine at The Philadelphia Polyclinic. Third Edition, Thoroughly Revised. Octavo volume of 717 pages. Cloth, $4.00 net; Half Morocco, $5.50 net. Philadelphia and London, W. B. Saunders, 1913.

These two volumes are somewhat different. In the first the questions stand as they were given in the various states of this country and in the various districts of Canada, followed by the answers supplied anonymously. In Goepp's book there has been a sifting process with the idea of presenting the various subjects as a composite examination, composed of all the questions commonly asked by examining boards in the states and Canada, during several years, followed by the appropriate answers. This book is much more comprehensive than the former, which gives each year the exact examinations of the preceding year as they are given in each state from Alabama to Wisconsin and in Ontario. In Goepp's book one finds the questions under the subjects, while in that published by Wood one looks under the names of the various states and Ontario for the questions and answers. The reviewer can not vouch for the correctness of all the answers, as one of the first to catch his eye was, "Describe essentials for the production and preservation of pure dairy milk," in an examination on practice, in Kentucky, recorded in Wood's book. The answer, purporting to come from Vaughan (probably a copy of some old article), makes no mention of the two primary requisites, i. e., pasteurization of milk and tuberculin testing of the cows. The answer does not deserve to pass. Many of the questions and answers are easily open to criticism. Thus, in Goepp's book, on page 534, "Give the symptoms of cholecystitis." Symptoms of the acute form are given but the question might refer wholly to the more common chronic type. On page 536, "Describe the steps in inguinal colostomy," there is no mention made in the answer as to the side on which the operation is done. It has always seemed to the reviewer that approaching the subject from the standpoint of questions asked in former examinations is a stupid, foolish and superficial way of preparation. With the expenditure of not much more time and energy one may really know the subject instead of the answers to a few questions which may or may not be propounded. WINSLOW.

Diagnosis in the Office and at the Bedside. The Use of Symptoms and Physical Signs in the Diagnosis of Diseases. By Hobart Armory Hare, M. D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College of Philadelphia. New (7th) edition, thoroughly revised and rewritten. Octavo, 547 pages, with 164 engravings and 10 full-page plates. Cloth, $4.00 net. Lea & Febiger, Philadelphia and New York, 1914.

There have been published in recent years a large number of books on diagnosis. In this volume a unique method has been employed, "whereby a recognition of symptoms will lead the physician to a diagnosis." A preliminary portion is used to discuss the interpretation of symptoms. Following this are chapters devoted to the different anatomic areas of the body and the various symptoms found in disease. The older methods called for comparison and analysis of the symptoms after making a hypothetical diagnosis. The reverse of this is followed by the author. Suppose a patient is suffering from paraplegia. In the chapter on feet and legs an excellent discussion of the various forms of loss of power in the legs is found, which should lead one readily to reach a diagnosis. The same may be said of the excellent diagnostic "wrinkles" one finds in the chapter on cough and expectoration, on vomiting, local and remote. Taken as a whole, the book must be regarded as a credit to an able teacher of ripe practical experience. The book is exceedingly satisfactory and deserves the warmest commendation.

LENSMAN.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Vol. III, No. II. Octavo of 213 pages, 55 illustrations. Published bi-monthly; price per year: paper, $8.00; cloth, $12. Philadelphia and London, W. B. Saunders Company, 1914.

This number contains a beautifully simple description of the pathology of the thyroid gland, by Dr. Murphy, which is the more appreciated because the various nomenclature of present-day writers has rendered the subject most confusing. The presentation of a case, in which the clinical history was somewhat confusing but in which the Abderhalden reaction was positive, confirmed the diagnosis of extra-uterine pregnancy and Dr. Murphy places much confidence in the test. There are most interesting discussions by Dr. Murphy on diagnosis, cholelithiasis, duodenal ulcer; and on pancreatic cysts by Dr. Mix and vesical papillomata by Bremerman. The publication reeks with vital interest and Murphy's genius as usual.

WINSLOW.

Radium Therapeutics. By N. S. Finzi, M. B., (London), M. R. C. S., L. R. C. P., L. S. A., Chief Assistant in the X-Ray Department St. Bartholomew's Hospital. 112 pp. Price, $2. Oxford University Press, London and New York. 1913.

This book presents a very clear and concise account of the new therapeutic agent, radium, and its rays, taking up respectively its chemistry and methods of application, laying special stress on its use and action in disease, particularly concerning new growths. While a small volume of some one hundred pages, it is of special value to those interested in this subject. SPEIDEL.

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ORIGINAL CONTRIBUTIONS

AUTOSEROTHERAPY.*

By E. A. Pierce, M. D.

PORTLAND, ORE.

Dorland defines autoserotherapy as the treatment of disease of a part by serum derived from the part. It was first originated by Gilbert, of Geneva, in 1894, but the subject was apparently neglected. However, of late the medical press has been covering this subject at some length. Autoserotherapy has even attracted the attention of the lay press, as is shown by an article in the World's Work of August, 1913.

I believe the time has come for the formal recognition of autoserotherapy as an efficient means of treating effusions in serous cavities. At the beginning Gilbert had thought only of applying this new method of treatment to pleurisy of a tuberculous nature; but he has since found that all serofibrinous pleurisy is amenable to autoserotherapy, and the truth of this opinion has been confirmed by most of the physicians who have used the method. It is also applicable to effusions into other serous cavities.

Besides Gilbert's[1] method of reinjection into the subcutaneous tissue, there have been used methods of connecting the serous cavities directly with the venous circulation or with subcutaneous tissues, resulting in either case in autodrainage—a modification of autoserotherapy. Then, again, there may be used autohemotherapy, another modification of autoserotherapy.

I have but one case to report on this subject, but the results of this method of treatment were so satisfactory that I am taking the liberty to present it.

On August 4, 1913, Mr. R. L., age 21, came to me for treatment of pulmonary tuberculosis. The physical examination revealed an infiltration of the right apex, with lagging of the respiratory movement, prolonged expiratory murmur, harsh breathing, loss of weight, hemoglobin 75 per cent., plood pressure 110, von Pirquet test positive, weight 143 pounds. An examination of the sputum revealed tubercle bacilli present, also leucocytes and staphylococci.

On Dec. 1, his temperature was normal, weight 160 pounds, cough had disappeared and evidently he was in an arrested condition, there having been no germs found in his sputum, and he had been taking a good deal of exercise, including some work. On Dec. 5, he complained of pain about the lower border of the ribs on the left side, which continued at intervals until Dec. 14. By this time the side had filled with fluid and Dr. C. J. Smith assisted me in aspirating, at which

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*Read before Portland City and County Medical Society, Portland, Ore., Apr. 15, 1914.

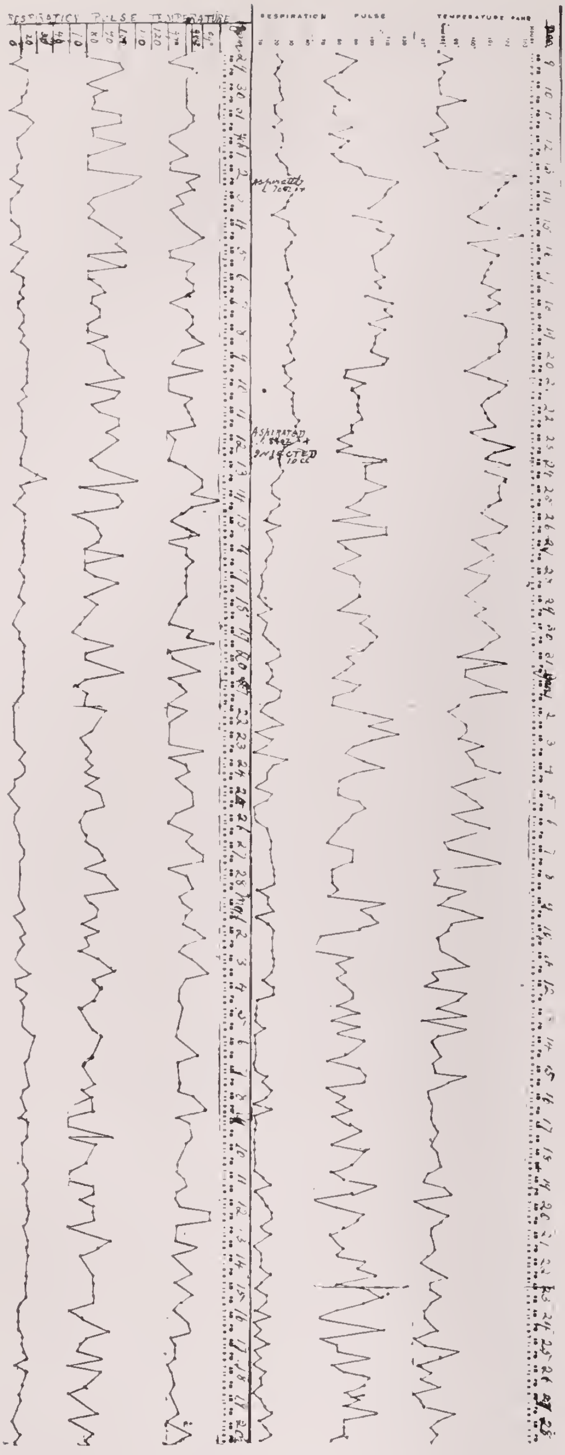

Chart of R. L.

time we removed 70 ounces. On Dec. 23, on account of dyspnea, it was necessary to aspirate again, at which time we removed 84 ounces.

Dr. Smith suggested that we try a method which he had seen practised by Widal, following the lead of Gilbert and others, of reinjecting some of the aspirated fluid into the subcutaneous tissue. Using a 10 cc. syringe, we filled it with the serous fluid and, without completely removing the needle, injected it under the skin and into the subcutaneous tissue. There was a slight rise of temperature following the injection, after which it gradually receded. It was especially noticeable that the action of the kidneys was very profuse for several days. The pleural cavity never refilled and the patient made a rapid and uneventful recovery, both as to his lung condition and the pleural complication. (See chart.)

Rand and Bettman[2] used in 1911 autoserotheapy for ascites, in a case of nephritis with heart complications. Two cc. were injected on three occasions. The urinary excretion was increased but numerous tappings have been necessary since that time.

PLEURISY.

A most comprehensive article by Fishberg[3] appeared early in 1913. He quotes Gilbert as stating at the International Medical Congress in Rome in 1894 that since 1891 he, Gilbert, had been treating tuberculous pleurisy with effusion by the subcutaneous injections of a small amount of the fluid withdrawn from the pleural cavity. He notes that within a few days the pleural exudate disappears and the patient recovers.

This method seems to have been forgotten, but during recent years various European clinics have been sending out reports which tend to show there is great merit in the method of treatment which Gilbert terms autoserotherapy and he strongly urges its general adoption by the profession in properly selected cases. He reports that the method was based on researches made in 1890-1891 by De Bove and Reymond.

Georg Eisner has shown quite conclusively by recently performed animal experiments that this mode of treatment stands upon a scientific basis. From Eisner's experiments it appears that it is the subcutaneous injection of the fluid that is responsible for the absorbing of the exudate and that it is not due simply to the withdrawal of fluid mechanically stimulating absorption.

Fishberg reports 12 cases of pleurisy with effusion and, while not claiming it is specific, he believes it has sufficient merit to warrant its more general adoption. Within twenty-four hours after the injections the general condition of the patient improves, diuresis is increased and the dyspnea is less marked. A physical examination shows that the upper level of the fluid is lowered and within a week or ten days no fluid at all can be discovered. By the use of this method there is less likelihood of the formation of the large fibrous bands so common after aspiration of fluid from the chest and which lead to discomforts later in life.

This method of treatment has apparently no effects on the original condition as the case continues to improve as if there had been no pleurisy. In many cases a single injection is all that is necessary to effect a cure; in others the procedure must be repeated several times before the fluid is completely absorbed, while in some few cases autoserotherapy appears to be of no use at all. No dangerous or even threatening symptoms have ever been observed by any one who has tried this method of treatment and it may, therefore, be considered altogether harmless.

An interesting case was that of a young man of 25 who came to Fishberg's office for advice concerning the suggestion given him by a physician, that he must leave for the mountains because of tuberculosis of the lungs. Physical exploration of the chest revealed an effusion, the left pleura extending up to the sixth thoracic spine. This was immediately confirmed by an exploratory puncture. Fishberg did not completely withdraw the needle, but immediately turned it and injected the fluid contents of the syringe, about 3 cc., into the subcutaneous tissue at the site of the puncture.

The patient's history was rather suggestive. He had been coughing for three months, had slight fever, malaise, and later dyspnea on the slightest exertion. At no time had he had any acute pain in the chest. He had lost 18 pounds in weight during the three months. Treated at first for bronchitis, he was finally advised to go to the mountains to cure what was considered pulmonary tuberculosis. Fishberg's request that he call again within twenty-four hours was disregarded by the patient, but he showed up again ten days later, elling him that he could not call on the appointed day because he was too sick to leave his bed on a rainy day. But on the next day he began to improve, his strength showed signs of returning, his appetite was improving and the dyspnea had almost disappeared. While before the injection he could ot sleep on his right side, he noted that during the last three days, one week after the injection, it made no difference to him on which side he reclined. His cough and expectoration increased, but he did not complain because, as he put it, he found it easier to "bring up phlegm." He gained four pounds in those ten days. The level of the fluid was now at the seventh thoracic spine.

Another puncture with reinjection of the fluid was made, and the patient was given a prescription calling for five grains of potassium iodid three times a day. Within four weeks his condition had improved to the extent that he could resume his work, that of a watchmaker. Fishberg examined this patient one year later and found him in excellent condition, except for some defective resonance and faulty motion at the right base, which remained as traces of his pleurisy.

But not all Fishberg's cases of autoserotherapy were successful. In one patient with a large effusion in the right side the injection of 5 cc. of fluid on alternate days six times did not relieve the condition at all. On the contrary, the amount of fluid in the chest increased in spite of the treatment, with a concomitant aggravation of the general condition, especially the dyspnea. The displacement of the mediastinum, liver, etc., was extreme, so that tapping of the chest had to be done; 30 ounces of fluid were withdrawn on one occasion and 20 on another, although at each tapping he reinjected about 10 cc. of the fluid under the skin. He could not say that the eventual disappearance of the effusion could be attributed to the autoserotherapy in this case.

The question how autoserotherapy promotes the absorption of pleural effusions has been a source of speculation to various writers. Some authors are under the impression that all the reported favorable cases do not prove that the subcutaneous injection of the fluid is responsible for the absorption of the exudate. But, as I have shown, there are cases in which repeated exploratory punctures and even tappings are not effective, while autoserotherapy promptly stimulated complete absorption of the exudate.

Gilbert, the discoverer of this method of treatment, believes the exudate, especially in tuberculous pleurisy, contains the specific toxins of the tubercle bacilli and many other writers have accepted this view. Some think the exudate contains specific antibodies which accumulate in the chest, and that when injected subcutaneously they are absorbed immediately into the circulation and exert an influence on the absorption of the fluid. Others think there is in pleurisy an accumulation of autolytic products of cell metabolism which, when injected subcutaneously, bring about absorption of the exudate. This appears to be confirmed by the observation of Zimmermann that after autoserotherapy there is to be found a striking leucocytosis.

In a case in which Zimmermann made careful blood-counts, he found that before the injection of the pleural fluid the number of leucocytes was 8,500, while soon after the injection the number rose to 10,312. Within twenty-four hours the number again fell to normal. After another injection, four days later, the leucocyte count rose again from 7,812 to 15,000.

This observation would seem to confirm the suggestion made by some that the accumulation of autolytic products in the exudate—synthetic albumins and products of cell metabolism—are responsible for the absorption of the exudate after autoserotherapy (Senator and Schnutgen). Zimmermann's experiment, showing that an injection of a solution of peptones brings about a leucocytosis and also an increased diuresis, just as after autoserotherapy, is confirmatory of this view.

None of these theories has been proved. But the recent experimental investigations by Eisner[4] tend to give a scientific foundation to autoserotherapy. He performed some interesting animal experiments with a view of ascertaining the mode of action of this therapeutic procedure. He induced pleurisy in rabbits by injecting sterile oil of turpentine into the pleural cavity, and by another method produced tuberculous exudates in guinea-pigs. His results throw some light on the mechanism of autoserotherapy.

Thus, he found that, while most clinicians observed an increase in the temperature of the patient after autoserum injections, animal experimentation did not work in this manner. He did, however, find a decided influence on the leucocyte count. After every injection of the sterile exudate the number of leucocytes manifested a decided tendency to rise. In some experiments this leucocytosis appeared within twenty-four hours after the injection, while in others it was three or four days before it became evident. Injections of tuberculous exudate were always followed by a sudden and marked increase in the number of leucocytes, which lasted one day and receded just as quickly. In one case the increase in the number of leucocytes reached seven thousand, while in other cases the increase oscillated between three and four thousand. Control experiments showed no influence on the leucocyte count.

From his animal experiments Eisner concludes that there is beyond any doubt an increase in the number of white blood-cells, independent of any elevation of temperature, after the injection of tuberculous serum derived from a pleural exudate.

The suggestion that autolytic products of cell metabolism are the cause of the reaction after autoserum injections cannot be seriously considered, because of the short duration of the exudate at the time the experiments were made. Eisner is inclined to the hypothesis that the cause of the reaction was the presence of specific bodies in the exudate which were the cause of the increased leucocytosis. Whether there were also other bodies (autolytic products of cell metabolism) cannot obviously be definitely stated; nor is it definitely ascertained what kind of specific tuberculous bodies are active in such cases.

PERICARDITIS.

Jacobs and Chavigny[5] report a case of tuberculous pericarditis with much effusion, in which autoserotherapy by means of pericardotomy cleared up the case and has apparently cured the patient. The incision in the skin was sutured without drainage but the incision in the pericardium was left untouched so that any further effusion might drain away of itself and possibly induce a kind of autoserotherapy.

HYDROCELE.

Holt[6] says that in some cases of hydrocele which do not disappear promptly simple puncture with the needle, allowing the fluid to drain off into the cellular tissue of the scrotum from which it is absorbed, is an excellent means of treatment.

Caforia[7] extols the simplicity, ease and harmlessness of autoserotherapy and the freedom from by-effects at the time or later. He found it effectual in 45 per cent. of the cases in which he has applied the method, the outcome depending in large measure on the age of the hydrocele and the pathologic process responsible for it. In four bilateral cases he aspirated a few cc. of the fluid on one side alone and reinjected it with the usual technic, and the hydrocele on both sides retrogressed, showing the general action of the procedure.

HYDROCEPHALUS.

Payr[8] states that in the last three years he has operated in fifteen cases of hydrocephalus by various technics, all aiming to drain away the excess of fluid from the ventricle into the venous circulation. His patients ranged in age from six months to 20 years. Hydrocephalus was completely cured in 50 per cent. of the eight patients who survived in the first few months. The cases naturally were all of the severest types. In four he drained into the longitudinal sinus, in four into the jugular or facial vein, in seven into the subarachnoid or subdural space. Necropsy in the fatal cases showed that the drain was constantly permeable. He regards the results on the whole as very encouraging, the failures being principally avoidable by improved technic.

Heile[9] reported last year his attempt to ensure permanent drainage of the cerebrospinal fluid into the abdomen in a case of spina bifida. He sutured a loop of small intestine, drawn out near the spina bifida, to the open dural sac, and the drain answered its purpose perfectly, but so much fluid was drained away abruptly that the child succumbed to this and the effects of the laparotomy necessary to draw out the bowel. To avoid these drawbacks he now drains the fluid into the abdomen by means of a wick of six silk threads, introduced into the dural sac at one end and carried through a subcutaneous passage into the side of the abdominal cavity, into which it protrudes near the costal arch. The minute incisions rapidly healed in the case reported. The two-days-old infant was kept lying on his back with the pelvis raised for a time to prevent too rapid drainage. The child has no further signs to date of the spina bifida and hydrocephalus for which the operation was done.

Marimon[10] drains the lateral ventricle permanently into the parotid gland which he considers particularly adapted for rapidly taking up the fluid. He applied this method to an infant eight months old suffering with extreme hydrocephalus with good results. The infant in later months died of enteritis.

ASCITES.

Audibert and Monges[11] claim for themselves the credit of being the first to apply autoserotherapy in the treatment of ascites. They use a technic similar to that of Gilbert in tuberculous pleurisy. They describe a case of ascites of hepatic origin which was greatly benefited by the reinjecting of the patient's own ascitic fluid. Twelve injections of from 3 to 10 c.c. were made at intervals of about six days. There was no local reaction and no pain, the main effect being a copious and persistent polyuria, and the patient's general condition improved greatly as the ascites was drained away. In this case salt was withdrawn from the diet. These authors now apply autoserotherapy in all cases of recurring ascites.

Franke[12] has done omentopexy in five cases to drain away ascites and the result was an entire success in three. The last patient thus treated was a woman of 57 with syphilitic cirrhosis of the liver and the operation cured the tendency to ascites. His failures in the other cases and in a number on record constrained him to seek a better way, and he thinks he has found this in diverting the fluid into the subcutaneous tissue. In the two cases in which he has applied this technic, the patients were permanently cured of the ascites, as was demonstrated in necropsy. One was a woman of 48 with ascites from cirrhosis of the liver, the other a woman of 71 with chronic serous peritonitis.

He uses merely a loosely twisted silver wire to keep the hole open. This operation permanently diverted the fluid from the abdominal cavity and the wire healed in place without any inflammatory reaction, but the progress of the underlying disease rendered a permanent recovery impossible. He thinks that mild, chronic, serous peritonitis might be cured by the measure and a number of other conditions materially improved.

In the case reported by Stoney and Moorhead[18], the introduction of artificial silk lymphatics, according to the method suggested by Sampson Handley in 1910, was followed by disappearance of the ascitic fluid. The existence of chronic fibrous peritonitis with hepatic cirrhosis was demonstrated at the operation. The authors do not claim that the improvement which occurred is necessarily the result of the lymphangioplasty, as ascites of the type here presented may disappear spontaneously (as occurred for a time in this case during the first stay in the hospital), or may disappear after a simple laparotomy. The fact, however, that some fluid reaccumulated after the operation suggests that the mere laparotomy was not of itself the cause of the later improvement, but rather that the reaccumulation took place prior to the establishment of an efficient circulation via the silk lymphatics, and that once a sufficient circulation was attained no further transudation accumulated.

Volarelli[14] reviews the five cases on record in which the internal saphenous vein was implanted in the peritoneum in treatment of ascites. The outcome was a complete success in the three cases in which the saphenous vein was of normal size and permeable. In the two other cases necropsy showed total obstruction or excessively small size of the vein.

Is it not possible that to autoserotherapy is due the good effects of the exploratory operation in cases of tuberculous peritonitis, the serum being absorbed from the surfaces of the wound?

Evler[15] has applied to tuberculous ascites autoserotherapy after the principle of autodrainage. He produces a permanent fistula so that the fluid in the peritoneal cavity was drained into the subcutaneous tissue of the abdominal wall. Improvement was marked from the start. Ascites did not recur and the patient rapidly gained 25 pounds in weight. The peritoneal affection seemed to be entirely cured.

CANCER.

Krokiewiez[16] reports thirteen cases of cancer in which he drew 6 cc. of blood from the median vein and reinjected it at once into the subcutaneous tissue of the chest,—repeating the procedure at eight or ten day intervals. In the advanced cases the pains and vomiting were favorably influenced; the patients slept and ate better and regained more energy. In some cases the general condition took a marked turn for the better. This was especially marked when this autohemotherapy was applied after excision of the cancer. Convalescence seemed to be materially promoted.

McConnell[17] in a paper before the American Association for Cancer Research, reports preliminary results obtained by treating cancer with ascitic fluid. He says that carcinomatous growths without doubt do undergo retrogression, both spontaneously and after operations that do not completely remove the tumor. This may be due to the formation of connective tissue with necrosis and absorption of the cancer cell. Spontaneous disappearance is frequently seen in the tumors of mice. It often occurs in human beings, more often than is realized.

In the mechanism of protection against the invasion of foreign cells two factors are concerned—one the protective ferments of the invaded body, the other the enzymes of the tumor cells capable of exerting an autolytic action. The regression of tumor nodules may be due to the setting free of autolytic ferments as the tumor cells die from imperfect nutrition. That recovery does occur is shown by the reports of numerous observers. Beebe states that in 30 per cent. of cases considerable improvement locally and generally may be expected. In no instance has there been any results which would lead one to expect a cure. The favorable effects have been as follows: relief from pain, diminution of hemorrhage and secretion from the tumor mass when it has been located on a mucous surface, increase in weight and appetite, marked improvement of the general physical condition. In 25 per cent. of the cases there has been a cessation of growth on the part of the tumor and in a few it has appeared that the tumor has actually diminished in size. Serum has been given by subcutaneous injections in the flank and lumbar regions in doses varying from 10 to 125 cc. The size of the dose and frequency of administration are determined by the reaction, both local and general.

MARASMUS.

Leary and Hastings[18] state that they have had excellent results in the treatment of intractable cases of marasmus in infants by means of ascitic fluid, one ounce being injected daily for a period of varying duration. Twelve such cases are reported.

ELEPHANTIASIS.

Lanz[19] was able to obtain a complete cure in a case of elephantiasis in a man of 49, whose right leg had been gradually enlarging in size for five years, without pain, the disfigurement and discomfort resulting from the enormous size of the entire limb incapacitating the patient at times. Lanz kept the man in bed ten days with the limb raised, and then incised the thigh down to the bone and bored into the femur at the lower, middle and upper thirds. He then cut some narrow strips from the fascia lata and worked them into the three holes drilled in the bone, his aim being to induce a collateral circulation of lymph, opening a passage from the subcutaneous lymphatics into the intramuscular, subperiostal and narrow network of lymph vessels. Before suturing he made also a number of openings for drainage through the fascia lata. The silk suture the length of the thigh may also have contributed to the result. Relief was immediate and permanent. Now, three years later, no difference is apparent between the right and left leg, except that the skin of the right thigh seems a little thicker than the other. The fascia lata is an absolute barrier for the lymph routes, and by artificially opening passages through this barrier the whole trouble was cured. If the desired effect had not been attained he had intended to connect the lymphatics in the thigh with those of the seminal cord, pushing the latter over to the fossa ovalis.

SKIN DISEASES.

The excellent results obtained in various skin affections by injections of serum from pregnant women or other sources encouraged Spiethoff[20] to try the effect of reinjecting the patient's own serum. The outcome was quite encouraging so that he urges others, in obstinate skin affections, rebellious to external measures, to apply this method. He drew 50 or 100 cc. of blood from a vein of the forearm, and reinjected from 10 to 25 cc. of the serum from it into a vein.

Among the affections favorably influenced were pruritus, psoriasis, and Hebra's prurigo and herpetiform dermatitis. The number of cases is too small for a decided opinion as to the value of the method, but they confirm the assumption of Freund, Abderhalden and others as to the presence in the serum of some non-specific substance which has a direct modifying action. The results observed cannot be ascribed to the effect of the venesection alone as other patients treated with venesection failed to show the general and focal reactions.

CONCLUSIONS.

This resume sets forth the practicability of using autoserotherapy in treatment of non-purulent effusions in any of the serous cavities of the body. I will not attempt to draw any conclusions as I believe that they are self-evident from a review of the authorities quoted. I trust that the profession will give consideration to this valuable method of treatment when suitable cases present themselves, bearing in mind that it is not a cure all.

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BIBLIOGRAPHY.

1 Gilbert: Gaz. d. hopitaux, 1894, Paris. Vol. LXVIII.
2 Rand, D. H. & A. G. Bettman: Portland, personally reported.
3 Fishberg; J. A. M. A. 1913. Vol. LX. p. 962.
4 Eisner: Ztschr. f. klin Med. 1912. LXXVI, 34.
5 Jacob & Chavigny: Revue de Medicine, Paris, July, 1911. Abs. J. A. M. A. Vol. LVII, p. 1326.
6 Holt: Diseases of Infancy and Childhood, p. 684, 1902.
7 Caforia: Riforma Medica, Naples, Sept. 14, 1912, XXVIII, No. 37, Abs. J. A. M. A., Vol. LIX, p. 1586.
8 Payr: Arch. für klin. Chir. Abs. J. A. M. A., Vol. LVII, p. 1327.
9 Heile: Berl. klin. Wohnschr., Dec. 12, 1911, XLVII, No. 50. Abs. J. A. M. A., Vol. LVI, p. 311.
10 Marimon: Zenblt. für Chir., Aug. 12, 1911. Abs. J. A. M. A., Vol. LVII, p. 1172.
11 Audibert & Monges: Presse Med., Paris, XVIII, No. 10, pp. 81-88. Abs. J. A. M. A., Vol. 54, p. 915.
12 Franke: Archiv für klin. Chir. XCVIII, No. 4. pp. 843-1102. Abs. J. A. M. A., Vol. LIX, p. 1411.
13 Stoney and Moorhead: Lancet, London, April 22, 1911. Abs. J. A. M. A., Vol. LVI, p. 1515.
14 Volarelli: Policlinico, Rome, Vol. XVII, No. 46, pp. 1443-1474. Abs. J. A. M. A., Vol. LVI, p. 163.
15 Evler: Mediin. Klin., Berlin, No. 16, pp. 613-652. Abs. J. A. M. A., Vol. LIV, p. 1730.
16 Krokiewiez: Wein. klin. Woch, Vol. XXV, No. 34, pp. 1279-1310. Abs. J. A. M. A., Vol. LIX, p. 1333.
17 McConnell: Am. Assn. for Cancer Research, May 2, 1910, Wash., D. C. Abs. J. A. M. A., Vol. LV, pp. 340-341.
18 Leary and Hastings: Bost. Med. & Surg. Jour., Aug. 18, 1910.
19 Lanz: Zent. für Chir., Vol. XXXVIII, No. 1, pp. 1-32. Abs. J. A. M. A., Vol. LVI, p. 467.
20 Spiethoff: Abs. J. A. M. A., Vol. 60, p. 1269.
21 Evler: Mediz. Klin., Berlin, Vol. LX, pp. 201-240. Abs. J. A. M. A., Vol. LX, p. 950.

ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS.*

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Artificial pneumothorax, contrary to many other new methods of treatment which enjoyed enthusiastic reception and as quickly dropped, has slowly but surely made a place for itself in tuberculosis therapy. However, the number of physicians who are familiar with the method and make use of it is unfortunately too small, considering the number of unfortunate patients who could possibly be helped. All of those who have had sufficient experience with the method agree that it is the most important advance in the past ten years in the treatment of certain forms of lung tuberculosis, especially since it is applicable to those cases which up to the present time have baffled every effort.

While the English surgeon, Carsons, proposed the procedure on pure theoretical grounds, the honor for its introduction as a therapeutic agent belongs to Professor Carlo Forlanini who advocated it in 1882 and in 1892 did his first pneumothorax on a patient. Some time later (1898) Murphy proposed a somewhat different but vastly inferior method for inducing lung collapse which was less successful than the method proposed by Forlanini. While the Forlanini method was more successful, it failed to attract much attention. Seven or eight years passed before further communications appeared in the literature.

In 1906-07 Forlanini and his school, with perfected technic and much experience, brought out many contributions. Brauer and Spengler published their work which was soon followed by Saugman. Under their influence the method gained ground first in Italy, then Germany, Switzerland, France, England and America, so that now it constitutes one of the current methods of treatment and its technic and results have been discussed in many publications. Inasmuch as the surgical technic stands quite in the background as compared with the judgment to be exercised in selecting cases, time for refillings and course of treatment, I shall not go into detail here.

We employ the Forlanini-Saugman puncture method which has all of the advantages of the Brauer or incision methods and none of its disadvantages. Our apparatus is one designed by

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*Read before a meeting of the Physicians of the Indian Service, Fort Lapwai Indian Sanatorium, Lapwai, Ida., June 23, 1914.

Dr. Oskar Frank, Vienna, to which we have added a mercury manometer.

The mechanism by which lung collapse produces favorable results in a tuberculous process is complex but the principle is simple. Fixation and rest are two essential factors long recognized in treating joint tuberculosis and the same applies to the tuberculous lung. The compressed lung is no longer an air-containing organ, moving constantly with each respiration, but becomes fixed, air-empty, solid in consistence and the tuberculous process, instead of its usual tendency to cavity formation in the lung, now conducts itself as in a solid tissue with a tendency to fibrosis. The walls of cavities are pressed together and fixed so that healing may take place. Sputum, instead of stagnating, is pressed out into the bronchi like water from a sponge. The finer bronchi are compressed, thus extension of the disease through aspiration of blood or sputum into healthy parts avoided. Moreover, the fixation of the lung diminishes markedly the lymph stream and produces a local lymph and blood stasis with consequent toxin accumulation, therefore, relative detoxication of the entire body. This local toxin accumulation, no doubt, provokes scar tissue formation.

Authors are divided in their views over the blood-content of the collapsed lung. Whereas Brauer and Bruns, upon the basis of comparative examinations of compressed and healthy lungs, believe that the blood content is less, Sauerbruch and Cloetta, supported by experiments, are convinced that the compressed lung is better supplied with blood. Meyerstein came to the same conclusion but states that these deductions apply only to the collapsed lung and that the condition changes by compression where the blood supply is less. Perhaps this is responsible for the opposing views. The more or less sound lung accommodates itself by compensation, so that no respiration insufficiency exists.

The oxygen absorption takes place without any essential, at least lasting respiration frequency, because its blood supply is increased. This hyperemia exerts a favorable influence upon small tuberculous areas, should they be present. Thus the necessity for selecting strictly unilateral cases is not so absolute, for Forlanini has reported success even under these circumstances, by attacking first one side then the other. At the same time it must be pointed out that, in cases with extensive disease on one side and active disease on the other, the patient's condition may be aggravated by the increased function and consequent toxin liberation. In our series of cases, in 18 and 20, both sides were attacked alternately with only temporary improvement.

The healing action of the pneumothorax is anatomically proven through Forlanini, Graetz, Warnecke, Kistler and Grotz, who have had an opportunity to examine the lungs of individuals that had been compressed and died of intercurrent disease. Tuberculous areas were dry and surrounded by enormous masses of fibrous tissue, dense scars indicating the former situation of cavities. On the other hand, the healthy lung tissue showed perfect ability to functionate. (Kistler, Grotz). Kaufman and Bruns have shown by animal experiments that a chronic interstitial pneumonia or chronic pleuritis may develop in the compressed healthy portion, especially after an exudate.

Pneumothorax therapy should not be withheld as the last resort and reserved alone for advanced cases. It is a mistake to wait too long, not only on account of adhesions forming and preventing a collapse but from the danger of disease appearing on the other side. The indications for an artificial pneumothorax vary within the widest limits and, unfortunately, still today exact indications are difficult to state and nothing is more harmful to the method than indicationless operating. Forlanini no longer advises a prolonged trial of usual methods but advocates the procedure the moment the signs of breaking down occur.

We believe the procedure indicated in the following: (1) All chronic, clinical, or x-ray demonstrable destructive fibrocaseous processes, even if limited to one lobe; (2) severe acute infiltrating and caseous pneumonic forms; (3) chronic infiltration processes even if limited to one lobe if of a progressive character, and in spite of a conservative trial of hygienic-dietetic procedures show no tendency to heal; (4) severe or repeated hemoptyses, also permissible if disease exists on both sides; (5) some non-tuberculous lung disease, for instance, bronchiectasis. Isolated lower lobe tuberculosis, on account of accompanying bronchiectasis and difficulty of collapse, gives a bad outlook. Wellman justly emphasizes that it is not the extent but the uninfluenced progress of the disease that indicates the procedure.

Artificial pneumothorax is justified in cases with severe disease on one side and not more than one-third of the good side invaded, if possible without softening. Undoubtedly the worst cases are those of caseous pneumonia where for anatomic reasons no effectual collapse can be hoped for. However, favorable cases have been reported by Brauer and Volhard and others. In our own series we have attained satisfactory results in one case. (Case 15.)

Collapse therapy is recommended also in pleurisy with effusion and empyema. Here gas is introduced after puncture and withdrawal of the fluid. (Case 39.)

In judging the indications in a given case the following conditions must be considered:

(1) The more advanced the disease the less probable it is unilateral.

(2) The more advanced the disease the more likely adhesions are present and in consequence of which the more difficult will be the operation, the longer must compression be maintained and the less certain the results.

(3) The more localized the infected area, the greater will be the portion that will functionate later and the more likely it will be to maintain life in case the other side requires compression.

(4) Lastly, in those cases of old and extensive tuberculosis along with the cavities, caseous areas are always present which we know, together with the cavities, represent one of the most frequent complications of the treatment, namely, lung perforation, and for these reasons, although the indications in every case may be the same, the operation may not be so successful.

Every individual case represents a question for the physician to solve on the basis of his experience in the usual and pneumothorax therapy, considering the clinical findings, previous course of the disease, the result obtained and the possibility or impossibility of the usual therapy. In early cases, where one is likely to obtain results by usual measures, the pneumothorax can be done in case of failure of the hygienic-dietetic, physical and specific therapy, but at just what stage or time, unfortunately, no fixed rule can be given.

The contraindications are active processes in both lungs, emphysema and asthma complicating a tuberculous process, lung gangrene, severe laryngeal tuberculosis, although small infiltrations or ulceration is no contraindication. Myocardial degeneration and uncompensated valvular lesions are contraindications but not the frequent small pulse due to toxic causes. Toxic albuminuria is no contraindication. Both of the latter disappear with improvement of the patient's general condition. Pronounced intestinal tuberculosis is probably a contraindication, although Brauer and Spengler have seen two cases heal.

Whether the operation can be carried out and its success depend upon the presence or absence of adhesions, and here a history of previous pleurisy is no proof of their existence. Our diagnosis of adhesions at best can be no more than a suspicion, because an absolute method to exclude adhesions does not exist for, in spite of lung border excursion, moveable diaphragm, clear x-ray plates, adhesions can exist and render the collapse impossible. Such observations are constant among authors. As long as the x-ray or clinical examination shows no certain signs of adhesions, we are duty bound to try, and we agree with Saugman that the clinical examination method with reference to lung border excursion, although not certain, is superior to the x-ray. However, the x-ray is essential for control and must not be missed at any price. Strong weakening of the breathing over the lower lobe, local shortening of the inspiration (Jacquerod's sign) and the demonstration of diminished lung excursion by percussion give us important hints of existing adhesions, but at times all of these signs fail.

If gas be introduced, we have four ways in which to determine the size and form of the pneumothorax, presence or absence of adhesions: (1) physical examination, (2) x-ray, (3) manometer estimation of intrapleural pressure, (4) quantity of gas.

Physical examination. After having utilized the physical diagnosis so splendidly in selecting the site of puncture, it is striking how little service it is in determining the size and character of the pneumothorax, especially a small flat one, since neither tympany nor weak breathing can be demonstrated. With a large pneumothorax and strongly compressed lung the breathing is distinctly weak or absent, rales are very faint and distant if at all present. In case adhesions prevent certain lung portions being entirely cut off from breathing, one hears through the gas distinct breathing of a peculiar, ringing quality, similar to amphoric breathing. Rales, if present, have a characteristic metallic character. By percussion one at times obtains, in total and large pneumothorax, tympany over the whole thorax, also often over the noncompressed side, due to the compensatory changes, so that one can be in doubt as to which side has been compressed. Of course, here

QUANTITY	INSPIRATION	EXPIRATION	REMARKS
0	—1	+1	
300cc	—1	+1	PRESSURE FALLS TO O BEFORE INS OR EXPIR IS COMPLETE
500	0	+1	
1000	0	+1	NO PAIN OR FEELING OF FULLNESS.
1500	0	+1	
2000	0	+1	METALLIC TASTE.

Fig. 1.

QUANTITY	INSPIRATION	EXPIRATION
—	—7	—2
100cc	—5	—1
200	—2	0
400	—1	+2
500	—15	+25
700	—2	+4
900	+3	+6
1000	+4	+7

Fig 2.

QUANTITY	INSPIRATION	EXPIRATION	REMARKS
—	—4	—2	
100cc	+6	+8	PT. COMPLAINED OF SEVERE PAIN.
150 "	+7	+10	
200 ·	+12	+17	

Fig. 3.

the breathing shows clearly, one hears over the noncompressed lung intense, sharpened, vesicular breathing.

X-ray. All authors are agreed that the x-ray is of greatest value, not only in selecting a site for the pneumothorax puncture, but in determining the character of the pneumothorax, also the degree of compression, location and extent of adhesions, and position of mediastinal contents, etc. In fact, it does such splendid service that it must be regarded as a necessity. It is worthy of note that the small, flat pneumothorax, so difficult to demonstrate by physical diagnostic methods, is often overlooked by fluoroscopic examination, only to be detected by the plate, and in this connection we have found the stereoscopic plates exceedingly valuable. The diagnosis of "paradox diaphragm movement" in the absence of an inverted pressure reading can be made at all times only with fluoroscope.

Manometer readings. An exact knowledge of the manometer pressure readings and their significance is most vital, but not as simple as many authors suppose. There are many possibilities which require careful study in order to make a certain decision. Of greatest significance is the question whether the puncture needle has passed into the pleural space, lung cavity, bronchus or pulmonary vessel. If the needle has entered air-containing lung tissue and superficial quiet breathing occurs with open glottis, the manometer shows an excursion above and below the neutral point, usually at + 1, —1. By deep breathing the variations are somewhat greater, perhaps + 2, —2, but never beyond. Furthermore, one will observe (the patient breathing slowly) that the — 2 occurring during inspiration falls to neutral before the expiration begins, and the + 2 exists only with the beginning expiration and falls to neutral before inspiration begins. The basis for this is that the pressure variations in air-containing lung tissue, when the glottis is open, exist only during respiratory movement. Furthermore, should gas be admitted, it enters with suspicious rapidity and the patient feels no signs of pressure but may complain of a metallic taste in the mouth. The above applies also to instances where the needle enters a cavity or bronchus.

Should the needle enter the lung, a cavity or bronchus, there is no cause for alarm. It is associated with no danger, one only has to remember that *no gas* is to be admitted, for herein lies the danger. A careful study of the manometer will instantly reveal the condition. Fig. 1 illustrates a reading on case 1, where needle entered a cavity.

In case a pulmonary vessel is entered the pressure becomes slightly positive and remains stationary. If the needle be in solid tissue, the manometer registers neutral and no movement takes place. If the needle be in the pleural cavity, the manometer at once shows two characteristics. First, movement essentially greater than above mentioned. Furthermore, it maintains itself at the end of the respiratory phase and does not sink back to neutral, the pressure being invariably negative in primary punctures. A reverse curve, one that is + on inspiration and — on expiration, occurs in pneumothorax only in "paradox diaphragm movement." However, the latter does not always produce reverse pressure values. The "paradox diaphragm movement" can occur from too great pressure in the pleural cavity. In case the pressure gradually increases as gas is let in and no pain complained of, it speaks for absence of adhesions. (Fig. 2.)

Contrary to Fig. 2 stand those wherein, after the introduction of relatively small quantities of gas, the pressure becomes very high. Such value indicates adhesions and the patient complains of much pain, often referred to shoulder or stomach. (Fig. 3.)

An interesting course may also be shown by the manometer when under the increasing pressure the adhesions sometimes give way, thus suddenly increasing the size of the cavity and a momentary

QUANTITY	INSPIRATION	EXPIRATION	REMARKS
—	−2	−1	
100 c.c.	+12	+13	SEVERE PAIN
200	0	+1	PAIN GONE.
300	0	+1	
400	−1	+1	
500	0	+1	
700	−1	+1	
1000	−1	+1	

Fig. 4.

lowering of pressure. (Fig. 4.) Fig. 4 shows a reading in case 1, due to rupture of a small sac of gas into a cavity.

As to the regulation of the quantity of gas no rule can be given. Every case must be individualized. The present day tendency is to give smaller quantities more often repeated, except in cases of hemoptysis. There is undoubtedly less danger of activating a process on the other side or infecting it by forcing the contents of a cavity out too suddenly by introducing too much gas on first inflation. The first inflation had better be 200 or 300 cc. This is one distinct advantage of the puncture over the incision method, wherein large quantities must be introduced in order that refillings may take place easily. We strive to hold our cases at weak + where adhesions are absent. With adhesions it is necessary to work with a more or less high pressure.

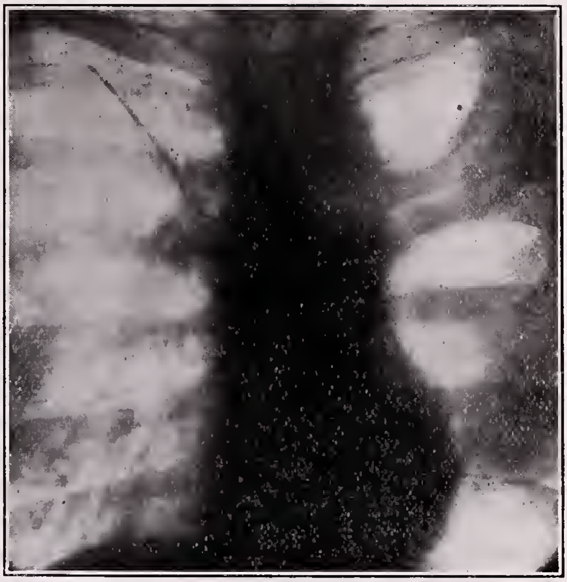


Fig. 6.

We agree with Saugman that the most harmless adhesions are between lung and diaphragm. The apical are serious (Fig. 5, case 16), but the most serious are those attached to the chest wall (Fig. 6, case 13). In case 19 adhesions attached to lateral wall of thorax were responsible for a complete failure to benefit the patient. (Fig. 7.)

We have attempted to dissolve these adhesions by all possible methods. Fibrolysin has proven valueless. Keller has used a pressure of 80 cm. H_2O, but high pressure has also failed not only in our hands but in others. Twenty to 30 cm. of water should be the limit, although a much higher

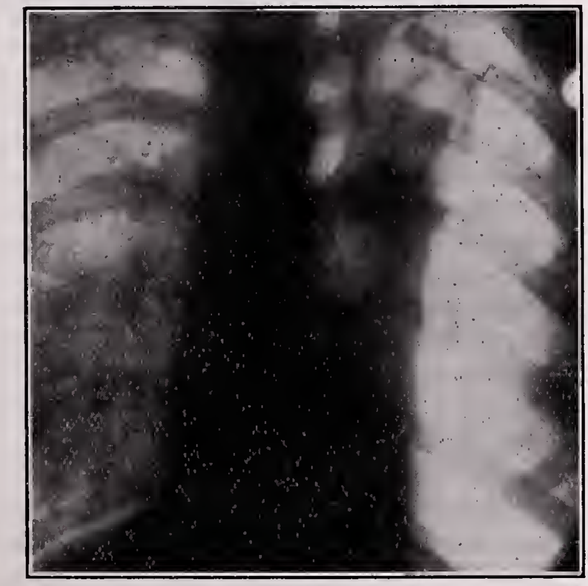


Fig. 5.

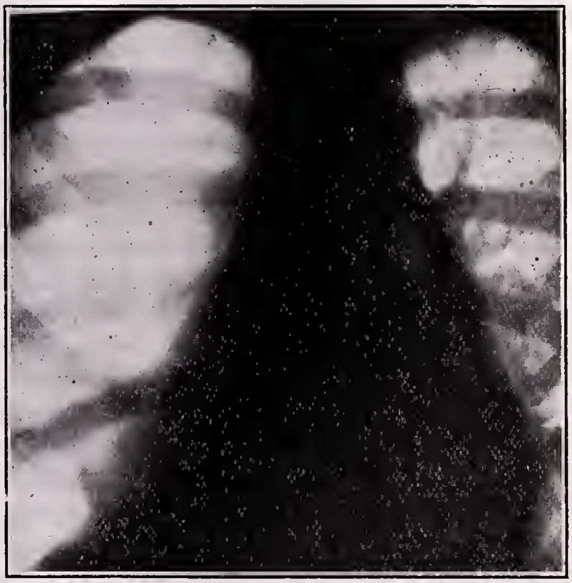


Fig. 7.

pressure may safely be used in some cases. In case 16 we used as high as + 80. Saugman has tried cutting adhesions and got a total hemothorax. Jacobaeus has used the cautery but did not attain his goal. However, his method seems the most reasonable. So far the difficulty is invincible.

The time necessary to maintain the pneumothorax is impossible to say so as to include all cases and conditions. Undoubtedly it occurs in pneumothorax therapy that, among those in whom it has existed for some time on account of the excellent result, well feeling and absence of discomfort, the treatment is discontinued too soon. As the gas absorbs, pleural layers becomes adherent, thus preventing reinflation should it be necessary. Average cases require from six months to two years. It is best to maintain it for a long time, for reinflations are required less often as time goes on. Furthermore, the compressed lung even after two years' compression usually resumes its normal function after expansion. Hemoptysis does not require such prolonged treatment. In short, the guide resolves itself to clinical findings, temperature, sputum, general health of patient, and is essentially an affair of experience.

Complications. When we consider the complications we must admit by far the most serious is gas embolism of the brain. Nitrogen may enter the pulmonary vein, be carried to the left ventricle and then to the brain, especially the cortex. This accident should belong to the first historical period of pneumothorax therapy. Early in our work we had this occur once (case 6). A hemiplegia resulted, lasting twenty-five minutes, recovery taking place. (NORTHWEST MEDICINE, Jan., 1914.) Sundberg holds that the so-called gas embolism as a cause of death is hypothetical and points out that animal experiments do not confirm this assumption.

A number of less dangerous intermediate cases, consisting of short periods of unconsciousness, tonic half-sided contractions, transient paresis comprising a nervous symptom complex of varied character and severity, is probably a reflex, due to a small wound or irritation of the pleura. The phenomenon is similar to the well-known symptom-complex occurring during a simple paracentesis. The symptom-complex has been studied by the French authors and designated pleural epilepsy or pleural eclampsia. The attack appears often during the first operation, chiefly in people who are weak and nervous, usually without warning and lightning-like in character, often the moment the needle enters the thorax or immediately after it is withdrawn, and sometimes fifteen or twenty minutes later. The clinical picture consists of psychic symptoms, numbness, loss of consciousness, mental confusion, or motor symptoms, tonic, seldom klonic contractions, especially of the limbs and on the pneumothorax side. In no case loss of bladder or bowel control, vomiting seldom. The pulse is rapid, weak, irregular, almost nonpalpable. Skin pale with cyanotic spots especially on the face, throat and chest, breathing superficial and irregular.

Pleural eclampsia can last from one-half to one hour. Recovery without complications is usual. Eclampsia is extremely seldom and benign, the only disadvantage being that one must leave off treatment. Atropin is best for prevention, morphin during attack or inhalation of ether or chloroform, heart massage, etc. Pleural eclampsia occurred once in case 12. Upon entrance of the needle patient complained of sudden, tonic contraction, associated with numbness and pain in the punctured side. The pulse became irregular and weak, breathing superficial, face pale, lips cyanosed. The attack lasted one-half hour and disappeared after an injection of morphin and atropin, leaving no consequences.

The most frequently occurring complication is exudate formation. Some authors have had as high as 50 per cent. We have seen it in 3 cases out of 41. It is not possible to state the cause in every case, but probably laceration of the pleura, especially in those cases ushered in with fever three to five days after the last filling. This occurred in case 16.

Meyerstein does not think the irritating action of air or gas or high pressure theory tenable. He believes it is due to the strongly increased blood supply to the collapsed lung. Some cases are no doubt due to the breaking through of tubercles lying beneath the pleura. Case 4, no doubt, had this type of hydrothorax. The complication requires no treatment as it accomplishes the same purpose as the nitrogen. It is best to let it alone as long as it gives no trouble. Case 4 has had a compression maintained by fluid more than a year.

Another accident is emphysema. The most serious and only dangerous form is an interstitial emphysema of the lung septum which can extend up to the hilus and lead to mediastinal emphysema.

Mild forms are the subcutaneous and subfascial types. These are seldom seen by us as we strap on a gauze dressing containing a marble to exert pressure over the puncture site, thus preventing the escape of gas. Rupture of the mediastinum at the so-called weak point of Nitsch is a hypothetical danger, one case of which has been reported (Birke).

Spontaneous pneumothorax as a consequence of a rupture of the compressed lung has occurred twice. Forlanini and Kuen each had one case. Perforation occurs over a superficial softened area or cavity, or by tearing out of adhesions which usually leads to fatal pyopneumothorax.

The complications of the other lung consist in acute exacerbation of existing disease, which is to be avoided by careful regulation of the gas quantity. Bleeding from the good lung has occurred but is rare and best avoided by using small quantities of gas. Slight bleeding and blood tinged sputum are frequently seen in beginning of treatment and come from the compressed lung. Complications on part of the larynx are not recorded in the literature. On the contrary, we have seen a great improvement in the larygeal condition.

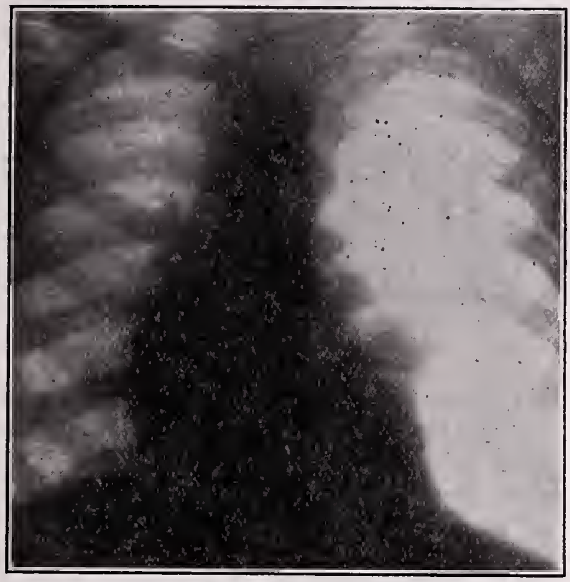


Fig. 8.

We would think complications on the part of the heart would occur on account of the high resistance of the collapsed lung or through the diminished suction action exerted upon the great veins by inspiration. The heart not only accommodates itself to these factors but also to its marked change in position in left-sided compressions. We have had many cases wherein the heart has been maintained on the right side for months with little inconvenience to the patient then or after. Case 5, that of a boy 16 years of age, played ball with no inconvenience with the heart to the right of the sternum. (Fig. 8.)

That an intestinal tuberculosis should be favorably influenced is thinkable, but is seldom seen. However, case 23, in spite of a laryngitis and enteritis, has improved. An intestinal tuberculosis became manifest during the course of treatment once. (Case 20.)

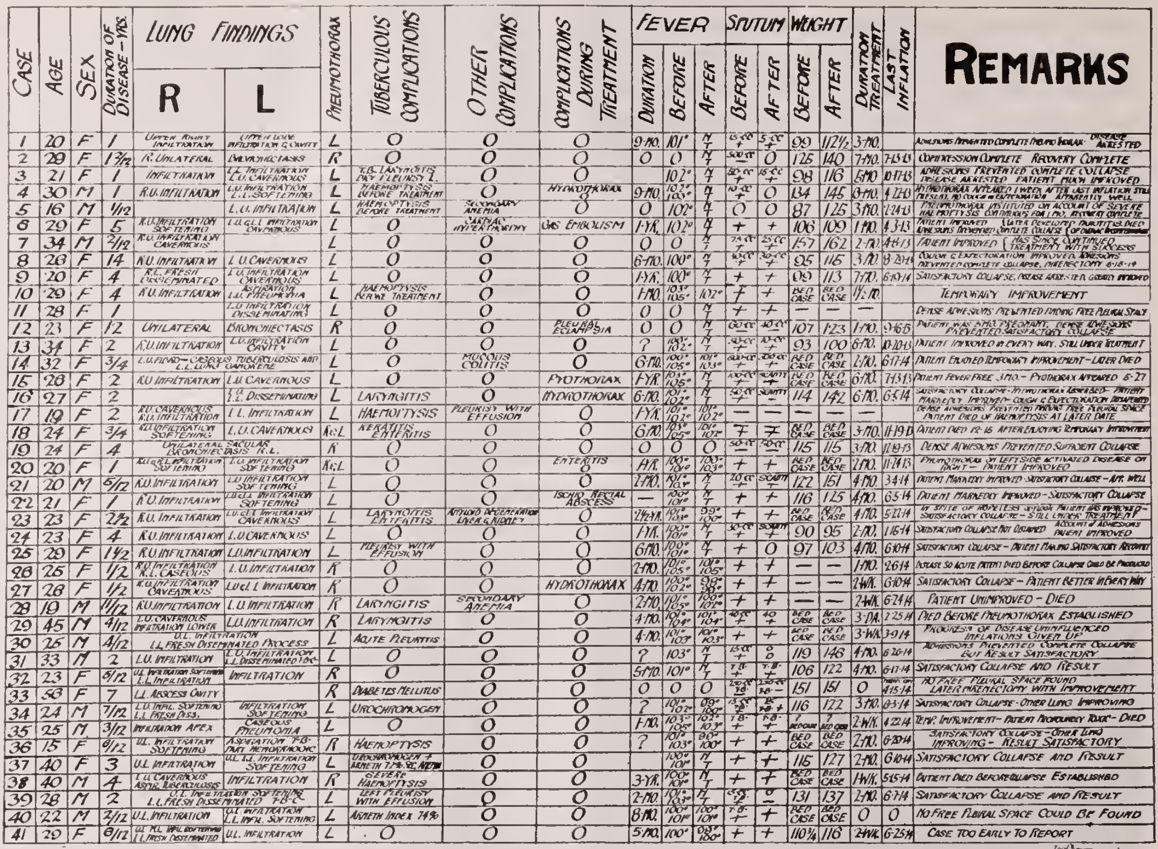
Results of treatment. The immediate result of a sufficiently large pneumothorax on an adapted case is the fall in temperature. This may be gradual, or rapid. The sputum becomes less at once, as in case 2, although in some cases the temperature and sputum are increased for the first day or two. A progressive improvement takes place, appetite and strength return, the patient gains in weight and night sweats disappear. In favorable cases one attains in a remarkably short time a clinical healing, since the objective and subjective symptom-complex is changed to the symptomology of the pneumothorax.

In presenting statistics of treated cases one must keep in mind that the material consists of an especially large number of desolate cases and a high mortality rate would be expected. The material is too large to present individual cases, but a glance at Fig. 9 will convince one that nearly all the material consisted in typically progressive cases, a great majority with an absolutely hopeless prognosis. In all of these cases hygienic-dietetic measures had been utilized.

In 4, or 10 per cent. of the cases reported, we failed to locate free pleura by physical diagnostic or x-ray methods and several attempts resulted in failure. This compares favorably with that of others. Weiss had 7.5, Saugman 11, Keller 12.5, and Zink 24 per cent. failures.

The other 37 cases divide themselves into three groups:

Group 1. On account of pleural adhesions the pneumothorax was too small and gave insufficient improvement to justify continuation of inflations, 7 cases or 15 per cent. Our percentage for this group of cases is particularly gratifying. Zink reports 27, Saugman 22, Keller 37.5, and Wellman 59.2 per cent. Five of the cases enjoyed permanent improvement and arrestment. (Cases 1,



CASE	AGE	SEX	DURATION OF DISEASE—YRS.	LUNG FINDINGS R	LUNG FINDINGS L	PNEUMOTHORAX	TUBERCULOUS COMPLICATIONS	OTHER COMPLICATIONS	COMPLICATIONS DURING TREATMENT	FEVER DURATION	FEVER BEFORE	FEVER AFTER	SPUTUM BEFORE	SPUTUM AFTER	WEIGHT BEFORE	WEIGHT AFTER	DURATION TREATMENT	LAST INFLATION	REMARKS
1	20	F	1	UPPER RIGHT INFILTRATION	UPPER LOBE INFILTRATION & CAVITY	L	0	0	0	9 MO.	101°	N/T	15 CC +	5 CC +	99	112½	3 MO.		ADHESIONS PREVENTED COMPLETE PNEUMOTHORAX. DISEASE ARRESTED
2	29	F	1 3/12	R. UNILATERAL	BRONCHIECTASIS	R	0	0	0	0	0	N/T	500 CC −	0	125	140	7 MO.	7-13-13	COMPRESSION COMPLETE RECOVERY COMPLETE
3	21	F	1	INFILTRATION	L.L. INFILTRATION L.U. CAVERNOUS	L	T.B. LARYNGITIS DRY PLEURISY L.	0	0		102°	N/T	50 CC +	15 CC +	98	116	5 MO	10-17-13	ADHESIONS PREVENTED COMPLETE COLLAPSE DISEASE ARRESTED PATIENT MUCH IMPROVED
4	30	M	1	R.U. INFILTRATION	L.U. INFILTRATION L.L. SOFTENING	L	HAEMOPTYSIS BEFORE TREATMENT	0	HYDROTHORAX	9 MO.	102° 103°	N/T	10 CC +	0	134	145	8 MO.	4-22-13	HYDROTHORAX APPEARED 1 WEEK AFTER LAST INFLATION STILL PRESENT. NO COUGH OR EXPECTORATION. APPARENTLY WELL
5	16	M	1/12		L.U. INFILTRATION	L	HAEMOPTYSIS BEFORE TREATMENT	SECONDARY ANEMIA	0	0	102°	N/T	0	0	87	125	3 MO.	1-24-13	PNEUMOTHORAX INSTITUTED ON ACCOUNT OF SEVERE HAEMOPTYSIS CONTINUOUS FOR 1 MO. RECOVERY COMPLETE
6	29	F	5	R.U. INFILTRATION SOFTENING	L.U. & L.L. INFILTRATION CAVERNOUS	L	0	CARDIAC HYPERTROPHY	GAS EMBOLISM	1 YR.	102°	N/T	+	+	106	109	1 MO.	4-3-13	PATIENT IMPROVED ADHESIONS PREVENTED COMPLETE COLLAPSE {LATER DEVELOPED PAROTITIS. DIED OF CARDIAC DECOMPENSATION
7	34	M	2/12	R.U. INFILTRATION CAVERNOUS		L	0	0	0	0	0	N/T	75 CC +	25 CC +	157	162	2 MO.	4-8-13	PATIENT IMPROVED {HAS SINCE CONTINUED TREATMENT WITH SUCCESS
8	26	F	14	R.U. INFILTRATION	L.U. CAVERNOUS	L	0	0	0	6 MO.	100°	N/T	30 CC +	30 CC +	95	116	3 MO.	8-20-13	COUGH & EXPECTORATION IMPROVED. ADHESIONS PREVENTED COMPLETE COLLAPSE. PHRENECTOMY 6-18-14
9	20	F	4	R.L. FRESH DISSEMINATED	L.U. INFILTRATION CAVERNOUS	L	0	0	0	1 YR.	100°	N/T	+	+	99	113	7 MO.	6-10-14	SATISFACTORY COLLAPSE. DISEASE ARRESTED. GREATLY IMPROVED
10	29	F	4	R.U. INFILTRATION	ASPIRATION L.U. PNEUMONIA	L	HAEMOPTYSIS BEFORE TREATMENT	0	0	1 MO.	103° 105°	102°	+	+	BED CASE	BED CASE	1½ MO.		TEMPORARY IMPROVEMENT
11	28	F	1		L.U. INFILTRATION DISSEMINATING	L	0	0	0	0	0	N/T	+	+	—	—	—		DENSE ADHESIONS PREVENTED FINDING FREE PLEURAL SPACE
12	23	F	12	UNILATERAL	BRONCHIECTASIS	R	0	0	PLEURAL ECLAMPSIA	0	0	N/T	60 CC −	40 CC −	107	123	1 MO.	9-16-13	PATIENT WAS 5 MO. PREGNANT. DENSE ADHESIONS PREVENTED SATISFACTORY COLLAPSE
13	34	F	2	R.U. INFILTRATION	L.U. INFILTRATION CAVITY	L	0	0	0	?	100° 102°	N/T	50 CC +	10 CC +	93	100	6 MO.	10-20-13	PATIENT IMPROVED IN EVERY WAY. STILL UNDER TREATMENT
14	32	F	3/4	L.U. FIBRO—CASEOUS TUBERCULOSIS AND L.L. LUNG GANGRENE		L	0	MUCOUS COLITIS	0	6 MO.	100° 105°	101° 103°	400 CC +	300 CC +	BED CASE	BED CASE	2 MO.	6-17-14	PATIENT ENJOYED TEMPORARY IMPROVEMENT—LATER DIED
15	28	F	2	R.U. INFILTRATION	L.U. CAVERNOUS	L	0	0	PYOTHORAX	1 YR.	103° 105°	N/T	100 CC +	SCANTY +	BED CASE	BED CASE	6 MO.	7-13-13	PATIENT FEVER FREE 3 MO.—PYOTHORAX APPEARED 6-27
16	27	F	2		L.U. L.L. DISSEMINATING	L	LARYNGITIS	0	HYDROTHORAX	6 MO.	101° 102°	N/T	50 CC +	SCANTY −	114	142	6 MO.	6-5-14	SATISFACTORY COLLAPSE—HYDROTHORAX ABSORBED—PATIENT MARKEDLY IMPROVED—COUGH & EXPECTORATION DISAPPEARED
17	19	F	2	R.U. CAVERNOUS R.U. INFILTRATION	L.L. INFILTRATION	L	HAEMOPTYSIS	PLEURISY WITH EFFUSION	0	1 YR.	101° 102°	101° 102°	—	—	—	—	—		DENSE ADHESIONS PREVENTED FINDING FREE PLEURAL SPACE PATIENT DIED OF HAEMOPTYSIS AT LATER DATE
18	24	F	3/4	R.U. INFILTRATION SOFTENING	L.U. CAVERNOUS	R & L	KERATITIS ENTERITIS	0	0	6 MO.	103° 105°	101° 102°	+	+	BED CASE	BED CASE	3 MO.	11-19-13	PATIENT DIED 12-15 AFTER ENJOYING TEMPORARY IMPROVEMENT
19	24	F	4	UNILATERAL SACULAR BRONCHIECTASIS R.L.		R	0	0	0	0	0	0	50 CC −	70 CC −	115	115	3 MO.	11-19-13	DENSE ADHESIONS PREVENTED SUFFICIENT COLLAPSE
20	20	F	1	R.U. & R.L. INFILTRATION SOFTENING	L.U. INFILTRATION SOFTENING	R & L	0	0	ENTERITIS 0	1 YR.	100° 101°	100° 103°	+	+	BED CASE	BED CASE	2 MO.	11-24-13	PNEUMOTHORAX ON LEFT SIDE ACTIVATED DISEASE ON RIGHT—PATIENT IMPROVED
21	20	M	5/12	R.U. INFILTRATION	L.U. INFILTRATION SOFTENING	L	0	0	0	2 MO.	101° 103°	N/T	20 CC +	SCANTY +	122	151	4 MO.	3-4-14	PATIENT MARKEDLY IMPROVED—SATISFACTORY COLLAPSE—APP. WELL
22	21	F	1	R.U. INFILTRATION	L.U. & L.L. INFILTRATION SOFTENING	L	0	0	ISCHIO RECTAL ABSCESS	—	100° 101°	N/T	+	+	116	125	4 MO.	6-5-14	PATIENT MARKEDLY IMPROVED—SATISFACTORY COLLAPSE
23	23	F	2½	R.U. INFILTRATION	L.U. & L.L. INFILTRATION CAVERNOUS	L	LARYNGITIS ENTERITIS	AMYLOID DEGENERATION LIVER & KIDNEY	0	2½ YR.	101° 103°	99° 100°	+	+	BED CASE	BED CASE	4 MO.	5-22-14	IN SPITE OF HOPELESS OUTLOOK PATIENT HAS IMPROVED—SATISFACTORY COLLAPSE—STILL UNDER TREATMENT
24	23	F	4	R.U. INFILTRATION	L.U. CAVERNOUS	L	0	0	0	1 YR.	100° 101°	N/T	30 CC +	SCANTY +	90	95	2 MO.	1-16-14	SATISFACTORY COLLAPSE NOT OBTAINED ACCOUNT OF ADHESIONS PATIENT IMPROVED
25	29	F	1½	R.U. INFILTRATION	L.U. INFILTRATION	L	PLEURISY WITH EFFUSION	0	0	6 MO.	100° 101°	N/T	+	0	97	103	4 MO.	6-10-14	SATISFACTORY COLLAPSE—PATIENT MAKING SATISFACTORY RECOVERY
26	25	F	1/2	R.U. INFILTRATION R.L. CASEOUS	L.U. INFILTRATION	R	0	0	0	2 MO.	101° 105°	101° 105°	+	+	—	—	1 MO.	2-6-14	DISEASE SO ACUTE PATIENT DIED BEFORE COLLAPSE COULD BE PRODUCED
27	28	F	1/2	R.U. INFILTRATION CAVERNOUS	L.U. & L.L. INFILTRATION	R	0	0	HYDROTHORAX	4 MO.	100° 102°	98° 99°	+	+	—	—	2 WK.	6-10-14	SATISFACTORY COLLAPSE—PATIENT BETTER IN EVERY WAY
28	19	M	11/12	R.U. INFILTRATION	L.U. INFILTRATION	R	LARYNGITIS	SECONDARY ANEMIA	0	2 MO.	101° 105°	100° 102°	+	+	—	—	2 WK.	6-24-14	PATIENT UNIMPROVED—DIED
29	45	M	4/12	L.U. CAVERNOUS INFILTRATION LOWER	L.U. INFILTRATION	R	LARYNGITIS	0	0	4 MO.	101° 104°	101° 104°	40 CC +	40 +	BED CASE	BED CASE	3 DA.	7-25-14	DIED BEFORE PNEUMOTHORAX ESTABLISHED
30	26	M	4/12	U.L. INFILTRATION L.L. FRESH DISSEMINATED PROCESS		L	ACUTE PLEURITIS	0	0	4 MO.	101° 103°	101° 103°	+	+	BED CASE	BED CASE	3 WK.	3-9-14	PROGRESS OF DISEASE UNINFLUENCED INFLATIONS GIVEN UP
31	33	M	2	L.U. INFILTRATION	L.U. INFILTRATION L.L. DISSEMINATED T.B.C.	L	0	0	0	?	103°	N/T	15 CC +	0 0	119	146	4 MO.	6-26-14	ADHESIONS PREVENTED COMPLETE COLLAPSE BUT RESULT SATISFACTORY
32	23	F	6/12	U.L. INFILTRATION SOFTENING L.L. INFILTRATION	INFILTRATION	R	0	0	0	5 MO.	101°	N/T	T.B. +	T.B. +	106	122	4 MO.	6-17-14	SATISFACTORY COLLAPSE AND RESULT
33	53	F	7	L.L. ABSCESS CAVITY		R	DIABETES MELLITUS	0	0	0	0	0	250 CC T.B.	250 CC T.B. −	151	151	0	4-15-14	NO FREE PLEURAL SPACE FOUND LATER PHRENECTOMY WITH IMPROVEMENT
34	24	M	7/12	L.U. INFIL. SOFTENING L.L. FRESH DISS.	INFILTRATION SOFTENING	L	UROCHROMOGEN	0	0	?	101° 102°	99° 100°	15 CC T.B.	15 CC T.B. +	116	122	3 MO.	8-3-14	SATISFACTORY COLLAPSE—OTHER LUNG IMPROVING
35	25	M	3/12	INFILTRATION APEX	CASEOUS PNEUMONIA	L	0	0	0	1 MO.	103° 105°	102° 103°	T.B. +	T.B. +	? BED CASE	? BED CASE	2 WK.	4-22-14	TEMP. IMPROVEMENT—PATIENT PROFOUNDLY TOXIC—DIED
36	15	F	8/12	U.L. INFILTRATION SOFTENING	ASPIRATION T.B. PART HEMORRHAGIC	R	HAEMOPTYSIS	0	0	?	101° 103°	99° 100°	+	+	BED CASE	BED CASE	2 MO.	6-20-14	SATISFACTORY COLLAPSE—OTHER LUNG IMPROVING—RESULT SATISFACTORY
37	40	F	3	U.L. INFILTRATION	U.L. L.L. INFILTRATION SOFTENING	L	UROCHROMOGEN + ARNETH 7.4% [illegible]	0	0		100° 101°	N/T	+	+	115	127	2 MO.	6-10-14	SATISFACTORY COLLAPSE AND RESULT
38	40	M	4	L.U. CAVERNOUS ASPIR. TUBERCULOSIS	INFILTRATION	R	SEVERE HAEMOPTYSIS	0	0	3 YR.	100° 101°	N/T	+	+	BED CASE	BED CASE	1 WK.	5-15-14	PATIENT DIED BEFORE COLLAPSE ESTABLISHED
39	28	M	2	U.L. INFILTRATION SOFTENING L.L. FRESH DISSEMINATED T.B.C.		L	LEFT PLEURISY WITH EFFUSION	0	0	2 MO.	101° 103°	N/T	T.B. +	0 −	131	137	2 MO.	6-7-14	SATISFACTORY COLLAPSE AND RESULT
40	22	M	2/12	U.L. INFILTRATION	U.L. INFILTRATION L.L. INFIL. SOFTENING	L	ARNETH INDEX 74%	0	0	8 MO.	100° 101°	100° 101°	T.B. +	+	BED CASE	BED CASE	0	0	NO FREE PLEURAL SPACE COULD BE FOUND
41	29	F	8/12	U.L. R.L. INFIL. SOFTENING L.L. FRESH DISSEMINATED	U.L. INFILTRATION	L	0	0	0	5 MO.	100°	98° 100°	+	+	110¾	116	2 WK.	6-25-14	CASE TOO EARLY TO REPORT

Fig. 9.

3, 6, 8, 24.) Case 6 died later of cardiac decompensation following mumps. Cases 12 and 19, both long standing bronchiectasis, were unimproved.

Group 2. Bilateral cases, no lasting improvement or where the disease was progressive in spite of the treatment and therefore discontinued, 9 cases or 25 per cent. Eight of these were absolutely hopeless and beneficial results could scarcely be expected. (Cases 10, 14, 18, 26, 29, 30, 35, 38.) Four had a caseous pneumonia, temperature 103 to 106°. One had a fibrocaseous tuberculosis and lung gangrene, temperature 105 to 106°. All enjoyed temporary improvement. The pneumothorax in case 20 was our only real disappointment. The case was bilateral, most extensive on right side; pneumothorax on right side. The second inflation was followed by an acute exacerbation in the opposite side. The gas was withdrawn from the right side and later the left side was compressed. The patient enjoyed an improvement in temperature which became worse with reactivation of disease on the right side again.

Group 3. Consists of cases where a satisfactory collapse was obtained, some of which are apparently well, others arrested and making good recoveries or very favorably influenced. This group comprises 21 cases or 50 per cent. Four are apparently well. (Cases 2, 3, 5, 21.) Sixteen are arrested and making good recoveries and still under treatment. (Cases 7, 9, 13, 15, 16, 22, 23, 25, 27, 28, 31, 32, 34, 36, 37, 39.) The last case, 41, is being very favorably influenced, also under treatment, but too soon to report. Most of the cases were bilateral. In 11 cases rales were demonstrable in the apex of the least affected side, but in 6 they disappeared as the case improved.

Of the 16 cases still under treatment 14 had fever ranging from 101 to 105°, as in case 15. All are fever free except 23, 27, 28, 34. Case 23, while bilateral with tuberculous laryngitis and enteritis associated with long continued fever, has improved markedly. Case 28 is too soon to report. Five raise no sputum; in the others it is becoming less. Case 2, unilateral saccular bronchiectasis, raised 500 cc. daily. Of the 16 cases under treatment, 12 are up and around and suffer little or no inconvenience from the compression.

THE RELATION OF TEMPERATURE TO INCIPIENT TUBERCULOSIS.*

By JOHN N. ALLEY, M. D.,
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The earliest monograms on tuberculosis laid great emphasis upon fever as one of the initial symptoms. Hypocrates, 450 B. C., in his writings, mentions the disease, the "beginning of which were fever, cough and sweats." He also states the treatment as one of "rest, milk diet and fresh air." Galen, writing 150 A. D., speaks of tuberculosis as "a fever, produced by mucous dripping from the postpharynx, and running down into the lungs." Richard Morton, in his excellent report of this disease, published in 1689, classified tuberculosis as continuous fever and divided the fever into the beginning or inflammatory fever, and the later or hectic fever. Thus is seen that from the first history of medicine the temperature wave of tuberculosis occupied a foremost place in the diagnosis; and with all the advance of science during the last twenty-five hundred years its importance has scarcely changed, for a careful study of the patient's temperature constitutes one of the best aids in an early diagnosis, is a constant guide in treatment and one of the chief factors in giving a prognosis.

That the full importance of the temperature wave may be understood, it must be studied accurately and regularly. Very little knowledge of the patient's real condition can be obtained by taking the temperature at irregular intervals. The temperature cycle in each case is generally quite uniform and a record made every two hours for the first few days will generally give a correct picture of the variations. After this it is well to take the temperature twice a day, at least. I prefer 7 a. m. and 7 p. m.

A young man from Virginia was referred to me some time ago. His chart, on which a fourteen days' temperature was recorded, showed a temperature never below 98 or above 99°, apparently a normal temperature. Yet the patient was very ill and was immediately ordered to bed. On inquiry I ascertained that he had visited the physician's office about 10 a. m. daily. A careful record of his temperature ranged, to my surprise, from 95° at 7 a. m. to 105° at 7 p. m., the 10 a. m. register being between 98 and 99°. This young carried a subnormal temperature when admitted. man died a few weeks later, a case of acute miliary tuberculosis, very different from that of incipient tuberculosis, the diagnosis reported to me, and to which his temperature record on his arrival corresponded.

The temperature should be taken not only daily for two weeks, but at least twice a day, morning and evening, and sometimes oftener. If the full value of the temperature wave is to be obtained and before a definite opinion can be given of any case showing symptoms of tuberculosis, the temperature must be taken, studied and compared while the patient is at rest, when taking gentle exercise and when engaged in the duties of general occupation.

I have often had patients while at rest showing a normal temperature curve. Very slight exercise would produce fever. Certain patients under my observation, with a half hour's violent exercise such as sawing wood or unloading grain, would raise the temperature five or six degrees. Such patients require treatment for a long time and great caution is to be exercised in permitting them to return to accustomed occupations when the tuberculous process is once arrested. Many incipient cases will develop a slight fever after meals which can generally be avoided by an hour's rest immediately after eating.

While practising medicine in the East some years ago, my attention was directed to a class of patients (females usually) suffering with anemia and general debility about the age of puberty. Careful study of ten of these showed a subnormal temperature in each case, ranging from 96° in the morning to 98° in the evening. The temperature curve was easily disturbed and apparently without cause, occasionally rising to 99 or 99.5.° Frequent and thorough examinations of the chest failed to demonstrate any definite signs of tuberculosis. I kept these patients under observation for ten years. Six developed tuberculosis and died.

These cases created a desire to further investigate the temperature wave of incipient tuberculosis and I have had opportunity since then to study five hundred cases so diagnosed. These have come from all parts of the United States and Alaska, most of them having been Indian school children admitted for treatment to the sanatorium of which I have charge. All records were taken by competent nurses under strict orders. Of the five hundred, 90 per cent., or four hundred and fifty cases,

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*Read before Spokane County Medical Society, Spokane, Wash., Feb. 26, 1914.

Five per cent. had some degree of temperature upon entrance but, with treatment, soon assumed a subnormal temperature and, with continued treatment, this generally came up to more normal lines.

Later, in those cases which terminated favorably, very little rise of temperature occurred, while in cases advancing, in spite of all that could be done for them, the temperature gradually increased until, toward termination, the range often extended from 95 to 105°. Five per cent. carried a temperature of 99° or over when admitted. I doubt whether this class of patients should be designated as belonging to that of incipient tuberculosis. In these I believe the process was beyond the incipient stage and that mixed infection had occurred with more or less destruction of living tissue.

Of the four hundred who had a subnormal temperature upon entrance, 90 per cent., or three hundred and sixty, sometimes showed a fluctuating, irritable temperature, one occasionally rising to 99 or 99.5°. The remaining 10 per cent. had a consistently subnormal temperature during the first six months of treatment, their average ranging from 96° in the morning to 98° in the evening.

Your attention has been called to this report for several reasons. First, that, in order to obtain a full knowledge of a patient's temperature, the latter must be taken and accurately recorded for at least fourteen days, no less than twice daily, preferably 7 a. m. and 7 p. m.; second, that many of the lessons to be learned from the temperature wave of tuberculosis are lost by carelessness in taking and recording; third, that the patient's temperature must be taken at rest, during gentle exercise, and when exercising more violently in order to bring out all the points concerned; fourth, that the beginning of tuberculosis is usually marked by a subnormal temperature, irritable and which, without discernible cause, will sometimes rise above the normal line.

How frequently will patients consult a physician when complaining of exhaustion, slight neuralgia and other symptoms of a physical condition below par. His history is taken, a physical examination made and the temperature recorded. There being no fever, the physician, giving a tonic, tells such a patient that in a short time health will be restored. In a few months the doctor may be surprised to learn that his patient is being treated for tuberculosis.

Many signs and symptoms of tuberculosis have been enumerated, some of them easy of recognition, others more obscure and only discernible to an expert of wide experience. It is the general practitioner who has the opportunity to see most of the incipient cases. These get into the hands of the family physician, usually consulting him for such complaints as headache, indigestion, rheumatism and many other symptoms. Before giving a definite opinion and diagnosis, all such symptoms should be most thoroughly gone over in conjunction with a temperature, taken regularly at least twice a day for two weeks, and under varying conditions of rest and different kinds of exercise.

The vague symptoms referred to, when combined with a careful study of the temperature wave and close observation of the patient's habits, are really only too frequently but initial symptoms of a tuberculous process. Acknowledging and giving full credit to the fine scientific tests for ascertaining a tuberculous condition in the human being, I still maintain that to sight incipient tuberculosis there is no greater aid than a detailed observation of the temperature wave, and that the majority of such cases carry a temperature often considerably below the normal line. Once fever is in progress the case is beyond the incipient stage.

Exactly to what extent the tubercle bacillus is responsible for fever in tuberculosis is a much debated question. Some claim there is but little fever produced by the toxins of the tubercle bacilli; others attribute most rise of temperature in this disease to mixed infections. However this may be, to return to the subnormal temperature of incipient pulmonary tuberculosis, when we consider that in its initial stage the disease is strictly local, involving as a rule a small portion of lung tissue, it would seem logical and natural to expect little action on the thermic centers.

Not only is the temperature one of the greatest aids in sighting incipient tuberculosis and thereby enabling the physician to begin his treatment at the most favorable stage of the disease, but it is also a guide to most intelligent treatment—the quantity and quality of food, amount of rest and exercise, the use of drugs, tuberculin, etc., the time for returning to the usual occupations and normal living, and the prognosis, to a very large extent, is made upon the patient's ability to reestablish a normal temperature.

THE APPLICATION OF SEVERAL ORTHOPEDIC PRINCIPLES TO GENERAL SURGERY.*

By Edward A. Rich, M. D.,
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Several decades ago, during the formative period of orthopedic surgery, a few general principles were laid down by keen students and were in time adopted by followers of the specialty. There was the principle of overcorrection of congenital deformities, of immobilization of tuberculous joints, of overcoming muscle-pull in fractures, of preventing oncoming deformities, and so on. These principles, nearly a score in number, have so positively proven their worth that they might be considered axiomatic. Yet, every now and then as the years have passed away, general surgeons, as well as orthopedic surgeons, have tried to struggle away from some of these prescribed axioms, only later to discover their mistake and swing around the circle to reaffirm the truth.

For example, we have no principle more mathematical in its preciseness than that which maintains "in the treatment of tuberculous joints that the aim should be to seek ankylosis rather than make an attempt to avoid it," the meaning being, of course, that ultimate motion in joints is best retained by procedures conservative and immobilizing. Although the above principle was established fully thirty years ago, there have been three concerted efforts made to disprove it. Two schools of surgeons and a sect have attempted to set it aside. Is it any wonder that, when there is such bounteous applause for grandstand playing, the venturesome operator should attempt to break away from precedent in treating joint tuberculosis and inject, constrict, mobilize, engraft into or thermacise the joints?

Usually, however, out of the enthusiasm of the originator of many of these departures there results some genuine contribution to surgery. The contribution may be small but nevertheless real. They may react, contre coup as it were, in giving service in unexpected places.

I well remember making the rounds in Bonn, with Prof. Bier, at the very height of his constriction craze. There had preceded a long, thorough and painstaking period of trial. Finally came the day when he made the hospital rounds saying, "Only an experiment. Tomorrow we shall amputate above this wrist, tomorrow we shall resect that knee, tomorrow we shall replace that hip in its cast." In six months nobody used the rubber ligature about a tuberculous joint, but today the cup suction is popular in treating superficial plegmon the world over.

You will ask in this connection about the recent work of Albee and about the theories that Ely propounds, whether they do not clash with the axiom under consideration. While it is far from my intention to discuss joint tuberculosis, it appears that both of these fearless operators have not attempted to weaken the general attitude toward the axiom.

In the beginning Albee assumed that his bone-graft, implanted into the spinous processes of several vertebrae above and below and including the one afflicted with Pott's disease, was sufficient fixation for the diseased spine. He soon concluded, as did Nutt, who succeeded him at the Sea-Breeze Hospital, that a mistake had been made. Tracings of his first thirteen cases showed that the kyphosis was eventually increased and that the method in itself was only supplemental. Albee and his followers continued the procedure which is not overtechnical, claiming, however, that the ankylosis from the bone-graft is an ajuvant to the old cast treatment, making shorter by some months the long treatment of the Pott's. One sees a few selected cases, in which time is a factor, where it is best to advise and resort to Dr. Albee's measure.

Ely has of late been enforcing the belief, in his insistent way, that ankylosis of the joint is the prime essential to the repair of a joint invaded by the tubercle bacillus. He has even gone so far as to have attempted at a recent orthopedic meeting to prove that the destructive tendency of tuberculosis in a joint was progressive, until measures toward ankylosis were fairly well established by nature. In other words, ankylosis of the joint would be a prime requisite to its repair. He boldly advocates the artificial production of ankylosis in some of the tuberculous joints.

Many orthopedists contend, on the contrary, that the artificial production of ankylosis is unjustifiable, on account of the fact that many cases, even of severe tuberculous arthritis, recover after long, conservative fixation treatment with fair, good or excellent function. Ely has rendered a service by emphasizing *immobilization* as the essential of treatment.

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*Read before Pierce County Medical Society, Tacoma, Wash., May, 1914.

CONSTITUTIONAL TREATMENT OR LOCAL TREATMENT.

It has been said that "we see in part." There is often a tendency today among surgeons to look upon a case as an affliction of a part, rather than of a whole. One sees the gallbladder, the prostate or the scoliotic spine, and is often unmindful of all that remains. I wonder if we boast wisely when we proclaim that we got Jones back home on the third day after an appendectomy, or that Smith got back to his desk two weeks after his gastroenterostomy.

A business man of my acquaintance states that the only respite in a long active business life, buffeted by competition and snowed under by work, that he had ever had was a two week's furlough, made imperative by an operation for strangulated hernia. He says he actually resented his doctor's permission to go back to work.

A well-known practitioner arose not long since, after about two weeks' stay in a hospital, following an appendectomy. Two weeks later he set out for a sojourn in Florida, declaring that all his professional life he had been treating the appendix and forgetting the man. He was determined to start aright in his own case, at least, and build up the body.

Whatever may have been the orthopedist's faults he has never been accused of the one under discussion, and that is because about the only place in all medicine where one has the courage to demand one, two or four years for the recovery from deep seated constitutional diseases is in the field of tuberculous joints and bones.

Rest and fixation have always been common doctrines made use of in joint lesions. Fixation has meant the placing of the part in a position that would demand nature's repair. But fixation has spelled more than that; it usually has meant the application of high or low body-casts, of long spicas, recumbency on frames or the use of some appliance that has rendered impossible the pursuance of customary vocations. The patient confined to these appliances of necessity has to give up the old life. He has to rest his brain, stomach and back, as well as his diseased hip.

I am almost ready to believe, in thinking of the sufferer from organic joint disease, that the rest given the poorly-nourished, germ-infected joint, does not contribute more to the successful issue of the case than does the recuperation and rest insistently afforded the exhausted and battle-weary constitution. In spite of our vaunted methods of inducing fixation by means of clever, conservative or surgical measures, I am about convinced that most of the success meted out to us is due to this factor of compulsory upbuilding of the entire body.

A great many cases are restored to health by the various manipulative sects and we might as well face the truth that most of the success of the masseuse and the osteopath in treating many general conditions is due to his painstaking endeavor to render tonic the atonic, and his efforts to bring the whole man up to par. I have wondered whether or not our modern tendency to rush the patient out of the hospital and back to his job was right to the patient or just to our profession. Do we demand a suitable convalescence for our patient, as we demand a suitable operating room for him? Would it not seem reasonable that a patient, who was able to pay a good fee for a needed piece of surgery, might afford the costs and the time for a complete recuperation?

EXHAUSTIVE EXAMINATIONS.

The next subject with which we shall deal pertains more nearly to the physician than the surgeon. In briefly bringing the subject of the need of a more careful physical examination before this body, my only apology is that every man, in every line of medicine, is his brother's keeper. Incomplete examinations and poor diagnosis bring all medical men into bad repute. Please continue to overlook the multitude of orthopedic sins and glance a moment at one virtue.

While there are some deformities, like the cleft palate or defects in the upper limbs that do not demand a complete body examination, yet the great majority of cases presented to the orthopedist require the removal of all the clothes, and an examination that comprehends all the skeletal structures of the body. In consequence, one would reasonably expect fewer diagnostic errors. The following case seems unbelievable:

H. B. B., 41 years, male, otherwise a robust laborer in a lumber mill, had limped for two months. He complained of pain in one foot and in the calf muscles. He was referred to one of our offices by a physician who had listened to his story and given him a superficial examination. Walking into the office he had considerable limp. Twenty minutes after we unclothed and unshod him, he walked about the room almost normally. His limp was due to nails in the heel of his boot.

Such a case is amusing on account of its absurdity but, on the other hand, our records show many cases like the following:

Mrs. C. C. M., 1908, 43 years. Family history uninteresting, except mother died at 50 of asthma. Patient mother of four children. History up to three years ago had no bearing on the case. At that time, while pregnant with last baby, began to have girdle pains and unusual amount of pain in back for a pregnancy. After childbirth pains continued in abdomen, back and down legs. Spots of anesthesia developed on one calf and heel, these areas later becoming hyperesthetic.

Fifteen months ago a surgeon investigated the case and made a diagnosis of oophoritis and pelvic disease, sent case to the hospital, where, laparotomy being denied, currettment, trachelorrhaphy and perineorophy were performed. At time of the physician's examination patient states that she told him there was a little lump in her back, but her information elicited no further inquiry. After the operation, while patient was in bed, there was some relief from the painful symptoms but these returned when she went home and resumed work. Two months later she consulted another physician who made an exhaustive examination and a correct diagnosis of Pott's disease in the second lumbar vertebra and referred the case to us. Case refused treatment and subsequently died of Pott's.

Further, I wish to emphasize the point that often there might exist gross pathologic defects, other than that complained of by the patient, which a complete physical examination would reveal. How often we must say to a patient: "If you had told me about that, I could have tended to it when I operated upon you." I do not need to present cases to make this point.

Our examinations for orthopedic purposes disclose a great variety of disorders, like abnormal exostoses, phimosis, undescended testes, lipoma and even prolapsed uteri and appendiceal abscesses. And, conversely, the orthopedic defects are discovered in the routine of general surgical examinations. The proper examination of a patient can only be conducted in a place and under conditions that allow access to the whole body.

The clothing has to come off and examination gowns furnished. We have found that adults and parents of children have much less diffidence about disrobing if they are provided with a room for the purpose and the room is kept very warm. Everyone has noticed that a shiver accompanies most refusal to disrobe. We casually walk with the patient, or the patient and his parents, into a special room that is comfortable, well-furnished and hot, then intimate to him that he is to take off his clothes, give him a clean robe and leave him. If it is a girl or woman the office nurse accompanies the patient. When we return he has complied.

It is generally believed, and the average German physician has proven it, that a man needs no exceptional ability nor phenomenal genius to be an excellent diagnostician, provided he has good eyesight, patience, plenty of time and a comprehensive scheme that insists on thoroughness. The matter of time ought not to enter the discussion for, if the patient and the examiner have not the time nor inclination to make a proper examination, none should be made. But if time be a factor, I believe with Keen, who used to say that "what you see is more important than what is told you." If anything be left out, it had better be the family and previous histories.

STIFF OR PAINFUL JOINTS, WHICH?

We have an orthopedic axiom that "in chronic joint affections it is better that the joint be stiff than that it be painful." Now while this axiom has been imbedded as a fundamental and while it has been accepted by the mass of orthopedic surgeons who have done most of the bone and joint surgery of the last quarter century, still we find isolated surgeons evidently not familiar with this truth, who occasionally exploit measures that try to prove its fallacy. Ultimately, if they be honest and truthful, they can only admit their error.

To illustrate. In a number of chronic, severe, internal knee derangements of common occurrence, we have among the list of symptoms one of great importance physically and economically—that of pain. There is no necessity here to discuss the subject of the economics of pain. We know the imperative demand for its removal, and so we ankylose the affected knee in its most useful position. Time passes, the former patient's physical and financial conditions are altered, and in later years he seeks restoration of the knee joint functions. He is operated upon by some enthusiast and, should he be one of the successful cases, he has some degree of mobility restored to the knee, and with this mobility he has his former inheritance of pain. The circle is rounded out and the patient is where he began.

It has been my experience in this connection to have been called upon twice to reankylose joints in which arthroplasties have been attempted. Once it was a nurse with a knee capable of about thirty degree motion, but so painful that function was absolutely impossible. The second case was a city commissioner who had sought motion in a stiff ankle joint, only to find that the price of motion was altogether too costly.

Any joint that is continuously painful on motion had much better be ankylosed in a useful position. A stiff joint will not incapacitate any energetic man to any great extent, but a painful joint will wear the life out of the strongest.

We have an actress with a stiff knee after arthrectomy for tuberculosis who, when last heard of, was playing in a stock company. We cite among others a brick layer, a garage proprietor, a grocer, a couple of society belles who have been delivered from invalidism, and whose normal business capacity or social happiness has not been much lessened by arthrodeses of the knees. We recall dozens of stiff hips and many stiff ankles that functionate admirably.

Knowing full well the controversial nature of the statement, but basing my conclusions upon end-results and somewhat extensive observations, I say with my orthopedic brethren that, arthroplasties are to be condemned in any of the main joints of the lower limb. Their field of usefulness is in the little joints, such as the tempero-maxillary and some of the joints of the upper extremity.

The destructive nature of the chronic joint affections must be anticipated in their beginning and we had better direct our attention toward the early diagnosis and relief of the destructive arthritis or the irritating internal joint derangement rather than to the impossible repair of joint damage after the harm has been done.

In conclusion, I would like to do what I can to counteract the idea that seems prevalent with some surgeons, that a stiff joint is one of the most terrible calamities that can befall a man. That attitude is unreasonable. A stiff joint in the leg is not as good, of course, as a normal one, still all stiff joints have been diseased joints. In the healing of tuberculosis of the bony system nature for once is defective. She leaves the back humped, the hip heals with the leg in abduction and flexion, the knee heals in a flexed position. It is not for the surgeon to mourn for the loss of motion but rather his opportunity to direct healing in useful positions.

Fidelity Building.

EXPERT TESTIMONY AND MALPRACTICE SUITS.*

By J. M. Semple, M. D.,
SPOKANE, WASH.

I do not think I am going too far when stating that medical expert testimony is under a cloud both in the eyes of the courts and the laity. This has been, and still may be, disputed, yet I believe it to be true, so in this discussion will treat it as a generally accepted fact. There are many causes for this unfortunate condition but the time limit on such papers prevents me from discussing other than the most important.

In the first place it is almost impossible to engage in a legal case without unconsciously showing bias in favor of the side you represent. This is recognized by the legal profession and advantage is taken of it. Then, too, it not infrequently happens that an expert goes on the stand with the intention of being absolutely fair but, because of the short-sighted efforts of the opposing counsel to belittle and humiliate him before the court, his antagonism is aroused and it would hardly be human for him to give other than biased testimony. This often results disastrously to the cross-examiner and is neither just to the interests of the opposition nor creditable to the medical profession, although partially excusable under the circumstances. The remedy for this difficulty rests with the legal profession. It is a wise lawyer who treats experts on the opposite side with courtesy.

But far oftener the fault lies with medical experts. Some of them go in for the fee only, irrespective of the merits of the case, and a few simply to get even with experts on the other side because of personal grievances. And that is not all. They not infrequently aid attorneys in drawing out complaints and in combatting testimony given on the other side during trial, but appear on the witness stand as unprejudiced experts. There may be no objection to an expert acting as associate counsel, providing he does not appear on the stand as an expert in that particular case, but it would be utterly impossible for him to give unbiased testimony under such circumstances. Therefore, to testify would simply cast further reflections upon his profession. If a medical expert be of any value whatever it is in aiding the court and the jury in arriving at facts so that justice may be meted out, not that one side or the other may win.

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*Read before Spokane County Medical Society, Spokane Wash., May 28, 1914.

The physical and mental examination in a medico-legal case differs markedly from that of an ordinary case and special compensation should be insisted upon on that account. In the first place you must start with the presumption of the possibility of malingering. You cannot thoroughly grasp the situation without such a presumption. The very fact that suit is instituted carries with it the assumption that the defense denies the liability; in other words, declares the claimant is malingering or grossly exaggerating symptoms. And, if the medical expert wishes to give an unbiased opinion, the possibility of an unjustifiable motive back of the claim must be considered. On the other hand, if the expert is to examine for the defense, he must not overlook the fact that the existence of injuries will almost surely be denied or greatly minimized.

In non-medico-legal cases the contrary is true. The patient is not seeking monetary redress but comes to you for relief from his sufferings and helps you in making a diagnosis. The difference is very great and, as work, time and responsibility in medico-legal cases vastly exceed those in ordinary cases, the fee, as before stated, should be proportionately more. It is claimed that the question of motive is not within the domain of the examining physician and should properly be left to the jury. It is true the jury must ultimately settle that question but the expert is supposed to be an aid to the jury and he fails to render his full duty unless his opinion is based on a thorough and careful study of all sides of the question. This is particularly true when the symptoms complained of are subjective in character. Not only should the expert in the most painstaking manner examine into the claimant's physical condition, his habits, actions and mental attitude, but his past history, and whether or not there is an impelling motive back of the suit which may either consciously or unconsciously color his testimony.

There is another side to this question, the discussion of which I trust will not lead you to believe that I favor corporations, for I am satisfied that methods employed by some of them are most reprehensible. On the other hand, the same is true of many individuals and their attorneys who are suing corporations. What I seek is that you be true to yourselves so that honor and probity, once so distinctive of our profession, shall again be recognized by the laity and the courts. I do not claim or pretend to claim that a majority, or even a comparatively small minority of medical experts are careless or mendacious, but there are some and it does not need many to bring opprobrium on the profession. When lawyers can claim and prove that they can get medical experts to testify on any side of any question, the laity does not discriminate between the few and the many. They simply hear the claim and see the proof and are satisfied that medical testimony is worthless.

Another question arises. Is there a relationship between expert testimony in accident suits and malpractice suits against physicians? In my opinion there is a direct relationship. In former years damage suits were exceedingly infrequent. By far the greater part of the claims were settled out of court. In later years there has been an enormous increase. Unquestionably the injustice of corporations in making settlement forced legal proceedings to be taken to get justice. The ease with which damages were obtained led unscrupulous attorneys to force settlement in unjust claims. This accounted for a considerable increase. This system then spread to and included smaller companies and individuals engaged in manufacturing and building operations with practically the same results. As success generally whets the appetite for further efforts, active lawyers began to reason, with so much diversity of opinion among medical experts, and the ease with which their services could be obtained, might not the medical profession also come within the scope of their activities?

Through the help of our profession they had become skilled in forcing forward subjective symptoms that were difficult to prove or disprove, so they concluded to try it on physicians and it stuck. Today no physician is safe whether the patient suffers from his own indiscretions or the act of God.

Did you ever hear of a lawyer being sued for damages, whether the loss had been due to mercenary motives, negligence, or culpable ignorance? Even if you consulted a reputable lawyer with the view to institute suit for the recovery of the money lost, you would probably be told the fault was your own and that you should have consulted an honest and capable lawyer. And that is about all you would get.

Little could be gained by a paper of this kind unless a remedy be suggested but, before bringing attention to the one I believe practical, it would be well to discuss briefly some of those already considered. One is to enact a law depriving both claimant and defendant of the right of selecting experts, leaving the matter entirely in the hands of the court. If my information be correct, such procedure would be unconstitutional because it would deprive litigants of rights entitled by common law. But, even if it proved constitutional, it would be of doubtful expediency because the court is not always capable of selecting the best experts as it lacks medical knowledge necessary to make proper selections.

It has also been suggested that medical societies make out a list of recommended experts, from which the courts could make selections but this, too, is objectionable because contending attorneys would claim that the question of friendship rather than ability influenced society officials who made up such lists.

To my mind the matter can be settled without the enactment of new laws. It can be settled and settled right by the medical profession, if it adopts and lives up to three simple rules. They are as follows:

(1) Never give expert testimony on a contingent fee.

(2) Never agree to identify yourself in any way with any new case further than to make an examination for a specified fee.

(3) Never appear as an expert witness unless that examination has satisfied you of the justice of the claim or, in the case of the defense, with the injustice of the claim.

The contingent fee system is mentioned first because it is the most corrupting of all methods. It is against human nature to expect an expert to be unbiased when his fee is contingent upon the success of the suit. It, therefore, breeds perjury.

The only safety lies in first insisting upon an examination for a specified fee. Then, if your findings support the contention of the claimant or defendant, as the case may be, you may be called as an expert witness at a given sum per diem. If not, you can be dropped from the list of possible witnesses. In this way you may sustain a temporary loss but you will retain your own self-respect and raise the standard of your profession, and in the long run both will be benefited.

AFFECTIONS OF THE EYES CAUSED BY SINUS INFECTION.*

By Clayton Seamann, M. D.,
PORTLAND, ORE.

The proper diagnosis of sinus affection is as important and interesting to the general practitioner as to the rhinologist or oculist. In fact, many obscure cases of general systemic infection can thus be traced and accounted for. I shall sketch very briefly this subject, purposely omitting any attempt to describe the anatomy of the accessory sinuses or reiterating descriptions found in text books which you can read at your leisure. Consideration of the maxillary sinus is not included, as it requires separate discussion. I would suggest, however, that careful consideration be given to the anatomy and physiology of the subject, for I dare say, without fear of contradiction, that too often is the judgment and skill of the practitioner hampered because of lack of minute anatomic knowledge and proper understanding of the function of the parts involved.

The nose is especially concerned in the process of humidifying, warming and filtering the inspired air and it is obvious that any obstruction or interference with these functions will produce dire and evil results. The blood will be deficient in oxygen and surcharged with carbon dioxide. Owing to the excess of carbon dioxide, the leucocytes are restricted in their action. Indican is often thrown into the circulation and, being a toxin, is productive of headache, depression and malaise. I could enumerate many conditions produced and induced from lack of air and oxygen, prominent among them being digestive disturbance, but our paper is to deal with special reference to ocular effects and with reluctance I must omit them.

Many experiments have been made by Bono to establish the relationship between the nasal cavities and the eye. The eye has an intimate communication with the nose through the tear duct, as well as through the lymphatics, blood vessels and the nerves.

It is a well known fact that inflammation extends by continuity of tissue from the throat, through the Eustachian tube to the middle ear; therefore, it may extend equally well to the orbital contents. Hoople claims that faulty air pressure in the nose may cause asthenopia of both ciliary and external ocular muscles.

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*Read before the Alumni Association of the Medical Department of the University of Oregon, Portland, Ore., June 3, 1914.

Tilley has shown that 6.8 per cent. of the entire population suffer from some affection of the nasal sinuses and it is claimed that 40 per cent. of all patients presenting themselves for nasal treatment have some sinus disease. The sinuses are the remains of an extensive olfactory sense; that is, an extension of branches of the olfactory nerve which is highly developed in some animals, especially the deer, but in man, through long ages of retrogression from primitive to civilized creation, their vitality has become greatly degenerated and thus they are prone to infection by pus-producing bacteria and in consequence thereof are of special importance to us because of the serious dangers they involve when affected.

By virtue of their peculiar relations, even the life of the patient is often threatened. Headache is one of the most frequent symptoms of these troubles. It is most commonly confounded with eyestrain. Dizziness or vertigo may be present. It may be present in simple catarrhal or suppurative inflammation. It is especially aggravated by stooping. Congestion in the sinuses is the cause of a like condition in the eyes. Papillitis, choroiditis, optic neuritis, iritis, keratitis may result. Conjunctivitis, corneal ulcer, orbital abscess and even brain abscess are likewise enumerated among the possible affections. Increased intraocular tension suggesting glaucoma has been reported by Quagline, Lennox, Cozzelene and others. Fish has reported two cases of primary and one of secondary glaucoma, in which marked relief of symptoms resulted after drainage of the sinuses, with improvement of vision and an increase in the field of vision.

Further, extension by continuity involves the ethmoidal cells, so that there is increased production of granulation tissue and pus which latter may become pent up. Further, endogenous production of suppuration may occur in any of the sinuses. In ordinary hypertrophy of the middle turbinate, polyp formation, etc., pus readily forms as a result of stagnation of secretions from obstruction.

The symptoms and diagnosis I desire to refer to, more from the viewpoint of the general practitioner than to elaborate upon them at length, because so many of these patients consult their family physician first. The symptoms may be much those of a chronic rhinitis. When the affection is a purulent one, of course there is a purulent discharge. There is tenderness and localized pain on pressure, neuralgias of the cheek, eye and forehead, nasal obstruction and difficult breathing. It is of very little value to note the exact point through which the pus enters the nose, except to differentiate which sinus is affected, and it is usually more than one or all of them when the patient decides to seek the physician.

The middle turbinate blocks the middle meatus in so many different ways that pus may easily appear to emanate from the antrum, when in reality it flows down from the ethmoidal cells. Of much more importance is it to note whether the middle turbinate is enlarged and congested and whether fungoid granulations or polypi have developed. We should not expect a suppurating process of the ethmoidal cells if the middle turbinate be normal. Elevation of temperature and general septic manifestations may be present, also swelling of the face. Bad breath, lack of appetite and loss of weight are suggestive.

Among the marked nervous symptoms are mental depression, amounting even to melancholia. In all cases of gastric disorders it is well to seek for presence of pus in the nasal chambers. Headaches and eye symptoms that cannot be accounted for by errors of refraction are particularly suggestive.

The ocular symptoms of sphenoidal suppuration are usually those dependent upon compression of the optic and oculomotor nerves. The optic nerve passes over the roof of the sinus and compression or even destruction of the nerve may take place. Optic neuritis followed by atrophy and blindness may occur. If the pressure reaches the sphenoidal fissure, the oculomotor, third, fourth and sixth may become involved and strabismus in some form may occur. Transillumination, x-ray and vacuum apparatus are valuable adjuncts to diagnosis.

The treatment consists of establishment of free drainage and removal of diseased structures. The nose should be made as nearly normal as possible. Partial and radical operations are necessary and indicated. The vaccines I have had little experience with, though good results are reported, particularly with the autogenous vaccines.

In conclusion, I would urge careful examination of the nose and throat in any patient presenting himself for a general physical examination and I do not feel that a patient has had a careful and painstaking examination when this is neglected.

IMPRESSIONS RECEIVED FROM A VISIT TO SOME EASTERN SURGICAL CLINICS.

By J. Tate Mason, M. D.,
SEATTLE, WASH.

My first inclination was to visit my old alma mater, University of Virginia, at Charlottesville. Here Dr. Stephen H. Watts, clinical professor of surgery, has a two-hundred bed hospital which is devoted almost exclusively to surgical cases. He undoubtedly does more surgical work than any man in this state. After witnessing his work I can readily see why this statement is true. He is a man imbued with the most modern ideas of surgery, possesses faultless technic and is an ideal Southern gentleman. My particular impression was the enormous amount of fine, black silk used instead of absorbable material. I was particularly impressed with his hernia operation, using what we call here the Halstead operation. Fine silk is used throughout, even to tying the small blood vessels. He claims to have done over two hundred and fifty hernia operations within a limited time with only one recurrence, that case being complicated with a diverticulitis of the bladder which became infected. He is a great admirer of Hugh Young's method of doing prostatectomies. He uses a needle holder very little. Hochnegg's operation for carcinoma of the rectum is done in this clinic instead of the Kraske, when it is possible. This is a beautiful operation and was the only one I saw during the trip.

Francis T. Stewart, clinical professor of surgery, Jefferson Medical College, is a quiet, unassuming young man, a tireless worker and even now is considered one of the foremost surgeons of Philadelphia. His anesthetics are given by intratracheal insufflation, for which the instrument is made by Tiemann. The anesthetist must be familiar with the technic of introducing the tube into the trachea, the procedure otherwise being very simple and it certainly produces a beautiful anesthesia. His work upon the neck for goitre and glands is of the highest grade. His incisions for carcinoma of the breast are somewhat different from any of those we have at the present time, the advantages of which are being written in a paper by himself which will probably come out in the fall. He utilizes the round ligament of the liver in occluding the pylorus. Traction sutures are used instead of clamps for his gastroenterostomies.

Perhaps the most pleasant and instructive afternoons that I spent on the entire trip were those in the clinics of John B. Deaver. The following is a typical list of operations that one will see at his clinic four days out of each week: Simple goitre, fibroid uterus, left varicocele, extrauterine, chronic, subacute and acute appendix, ovarian cyst and tubal disease, hemorrhoides, exophthalmic goitre, hysterectomy. Appendiceal abscesses are opened far on the side with no respect paid to the muscles. The appendix is removed, if it be easily found, and wound packed with gauze, no stitches. He claims to have a mortality of about 1 per cent. in these cases. He says, "While I acknowledge that I have 60 per cent. of postoperative hernias of a greater or less degree, I feel that the lowered mortality rate obtained by this method is to be greater considered than the possibilities of a postoperative hernia which can be closed without danger to the patient at a later date." He believes in carcinoma of the breast that both muscles should be removed in every case, stating that it is impossible for any man to make a dissection with the muscles intact. I believe it is a conceded fact that he does more abdominal surgery than any man in America, and I venture to state he deserves the name of being the greatest abdominal surgeon living. He, like most of the surgeons, performs cystectomies as the operation of choice over cystostomy, where there is any marked organic disease of the gallbladder.

Dr. Rodman, professor of surgery, Medico-Chi and president-elect of the American Medical Association, claims the highest percentage of cures of carcinoma of the breast of any man in America, (70 per cent.) He claims that cancer is purely a local disease and, when the operator is careful not to spill any of his cancer cells and will use sharp dissection in all directions, going as far as possible from his growth, the best results are obtained. His dissections are most extensive. The glands of the supraclavicular triangle, as well as the so-called umbilical chain of glands, are removed as a routine of practice. He states that the mediastinal glands, which it is impossible to get to, are, as a rule, the last ones to become affected. He believes in anoci-association and expects to teach it to his students in the fall of 1914. His son, Stewart Rodman, is following in the footsteps of his illustrious paternal predecessor.

Dr. E. Berwell-Holmes, an energetic young man who has probably seen as much cerebrospinal meningitis as any man in America, states that, where eosinophils are found, a prognosis is good. Another observation of his is that, where pure pus is found in the urine without bacteria, it is pathognomonic of a tuberculous kidney.

Dr. Babcock, professor of surgery, Temple College, uses spinal anesthesia in all of his operations, over 6,000 having been done in his clinic up to the present time without a single death that could be attributed to the anesthesia. He injects boiling water into his extreme exophthalmic cases, removing the gland in one week. His gastroenterostomies are done with traction sutures, the ligament of Trietz being often cut to get an exaggerated Mayo short-loop method. He is working now on an injection of stovain in the vein for head work.

Dr. Morris Booth Miller, professor of surgery, Polyclinic Hospital, runs a very large surgical clinic, assisted by Dr. James A. Kelly, another young man but one of the foremost surgeons of Philadelphia. They pay especial attention to the patients' diet, feeding them only sterilized food for two days preceding the operation and just before operating endeavor to sterilize the mouth, nose and throat as much as possible.

Dr. William Wordsworth, coroner's physician, has had more medico-legal cases than any man in America. His monograph on gunshot wounds has become a classic. His method of opening the brain is unique, to say the least. His cross-section method of opening the heart in situ has multiple advantages. This can all be seen in his new book on postmortem examinations which goes to the printer's hands in September.

Dr. John Erdman, professor of surgery, New York Postgraduate Hospital, does an immense amount of operating at Bellevue Hospital, as well as the Postgraduate. Everything goes off with a snap in his clinic which makes it very pleasant for visitors. I saw here my first sliding hernia. The patient was a very large man, in whom a castration of the left side had been done two years ago. The diagnosis of the left-sided sliding hernia was not made until he found the colon and omentum down without a sac. On closing, the patient was put in the Trendelenburg position and all of the continguous portion of the left rectus muscle sutured to the shelving edge of Poupart's ligament. Chromicized catgut was used as suturing material.

Professor Taylor, New York Postgraduate, chief of the same clinic as Dr. Albee, does the Albee operation in preference to the Hibbs for Pott's disease, using an Albee motor-driven saw for his tibial splint and only differs from Albee in immobilizing the vertebrae for six to eight months following his operation. Albee, however, removes his cast in about six weeks. These men are doing a great amount of work in orthopedic surgery. I had the pleasure of meeting Dr. Fassett, of Seattle, in this clinic, who seemed to be as enthusiastic as a child with a new toy over each orthopedic operation.

Dr. Gibson, New York Hospital, assisted by Dr. Lee, holds a very large clinic three mornings of each week. I had the pleasure of seeing a direct left-sided hernia in this clinic. The Bassini operation is used entirely. The Reverdin needle carrier is employed and it was amazing to see what nice and accurate sutures could be applied with it and how swiftly it was done. I believe in this clinic the work of the resident physicians was far superior to any I saw. Linderman's method of transfusion is used here. It is done with six glass syringes (ten cc.) and is so simple that any one familiar with using a needle for salvarsan can easily do it in his office. Dr. Poole, of this same clinic, is a very rapid operator and has the reputation of being among the top-notch young surgeons of New York.

Dr. Leo Buerger, of the Mt. Sinai Hospital, is the originator of the Brown-Buerger cystoscope. His apparatus for removing papilloma from the bladder, as demonstrated by himself, is one of the cleverest things in surgery. He has done a great deal of work for the genitourinary men and it seems a pity that he is giving up this line of work for general surgery. He uses a straight heel-needle which he has made in Germany. This is to keep the operator from having to twist his wrist on removing the needle. He has had nearly three hundred cases of thromboangitis, in which an arteriovenous anastomosis has been made. This disease occurs almost entirely in Jewish people. He has had only two Christians in this large list.

Dr. Moschowitz, of Mt. Sinai Hospital, uses a transverse incision in gastroenterostomies and has a large series of cases without postoperative hernias. The exposure that he gets through this incision is certainly much larger and more easily worked through than the usual right-rectus incision.

Dr. Elsberg, Mt. Sinai Hospital, does a large amount of cranial work. I saw him one afternoon do two suboccipital decompression operations, one puncture of the corpus collosum for hydrocephalus. His second occipital decompression was a multiple with cystic formation, as described by Oppenheim. This was a rare condition and his demonstration of the pathology was excellent.

Dr. George W. Crile, professor of surgery, Western Reserve University, with his associate, Dr. Lower, do all the surgery for the Lakeside Hospital in Cleveland. This is a large hospital and they average from six to eight operations each morning. All are done under the anoci-association, and I have never seen patients taken off the operating table in better condition than here. Dr. Crile's sharp knife dissection of goitre and hernias is perfect work. He uses fine silk for tying off his blood vessels and so complete is his hemostasis in goitres that he does not leave a cigarette drain. His claims for anoci are not merely his clinical observations but each step is proven by laboratory findings and I believe, before any of us condemn or praise his work, we should spend a week with him.

He has met with such marked success in his extreme exophthalmics that I feel it would not be out of place to describe in detail his method. An exophthalmic patient who has all of the typical symptoms, including a pulse of one hundred thirty, is taken to the hospital and given to understand that sooner or later the cause of her trouble will be removed. Each morning the nitrous oxide and oxygen apparatus is rolled into the patient's room and she is given a whiff or two of gas and extract of orange. This is done each morning by the same person until it is deemed advisable to operate. Then a few whiffs more of gas are given and the patient removed in this unconscious condition to the operating room. A one to four hundred novocain solution is used for the skin, fat and fascia and around the gland until a thorough exposure is made. Then ½ per cent. of urea hydrochlorate is used around the tissues, with the exception of the skin and the fat. After the goitre has been removed, a small amount of urea hydrochlorate is injected into the remains of the posterior capsule which he always leaves. The skin is closed with clamps. The patient is removed to her own room still under the anesthetic and is allowed here to come out with this gas anesthesia apparatus right by the bed, the same nurse and everything in the room just as it was when she was put to sleep. While in a semi-conscious state, or the twilight stage as he calls it, she is told by the nurse that the operation has been performed and that she is all right. This is repeated to the patient until she is able to repeat it back. At this period the pulse will be from four to six beats lower per minute than it was preceding the anesthesia.

In abdominal work the intestines are packed off as little as possible and I have never seen such respect paid to the peritoneum as in this clinic. As each visitor leaves he cannot but admit that he has seen one of the great men of the day and, while he may not endorse every one of his methods, he will agree that this man has done more for surgery within the last few years than any other man in America.

The Mayo clinic building at Rochester, Minn., which has recently been erected, is the greatest medical building in America. They average from eighty to one hundred and twenty new patients each day. Too much praise cannot be given Dr. Judd, the junior member of the firm. This is the only clinic where I saw Phinney's pyloroplasty performed. In cases where there is no organic lesion of the stomach or duodenum, a gastroenterostomy is not done. The pylorus is not tied off but, in enfolding the ulcer, if it be near the pylorus, they make a partial closure by folding it in close to the pyloric ring. They are using Hartman's method of going over as near the pylorus as they can in a gastroenterostomy. Inoperable carcinoma of the uterus is treated with Percy's fulgurating apparatus.

Before concluding I cannot resist the temptation to record a few impressions received during the meeting of the American Medical Association. It is certainly stimulating to a young man to witness the extreme fraternal, almost brotherly feeling between the older members and pioneers of our profession. We can all sit at home and read these papers but the impressions are transitory compared with those that are received after hearing them presented by the authors themselves. Most of my time was spent with the surgical section, of which Dr. C. K. Frazier was chairman and Dr. Judd secretary. There seemed to be four favorites and, when a paper was read and not thoroughly discussed, one of these was invariably called upon to respond. A rousing cheer amid much applause always preceded these men—Ochsner, Murphy, Phinney and Deaver. The scope of this paper is too brief to allow of further mention upon this subject, but I hope that my readers will look up the papers read in Atlantic City and read them thorough, knowing they will amply be paid for the time expended.

Alaska Building.

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon, Washington, Idaho and Utah.
Devoted to the Interests of the Medical Profession of the Pacific Northwest.
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AUGUST, 1914.

EDITORIAL

ASSOCIATION MEETINGS.

Oregon State Medical Association will meet at Portland, Sept. 10-11.

Washington State Medical Association will meet at North Yakima, Sept. 21-23.

Utah State Medical Association will meet at Salt Lake City, Sept. 29-30.

Idaho State Medical Association will meet at Boise, Oct. 8-9.

MEETING OF THE PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

The meeting of this society in Seattle last month was noteworthy, not only because it was the largest convention of its kind ever held on the Pacific Coast, but it marks an important step in the advance of medicine in the West. It was truly an achievement of which the members may well be proud, and it is safe to predict a most promising future for this, one of the youngest of the special societies. Five states and British Columbia were represented and twenty-one papers were presented, containing much research work. Lieut.-Col. Robert H. Elliot, of London, formerly of Madras, India, the society's guest of honor, delivered an address on sclero-corneal trephining in glaucoma, which was the latest word on one of the most important subjects in ophthalmology. On the morning of the second day Col. Elliot demonstrated his operation at a clinic at Providence Hospital, performing thirteen trephinings, and an opportunity was afforded all to see the work at close range. It is probably a fact that this was the best clinic on glaucoma ever held in this country, in number of operations, in the skillful performance and the opportunities for observation. We may add, too, that the results obtained in these cases at present writing are uniformly good. Another important feature of the meeting was the exhibits which included over seven hundred pathologic and anatomic specimens, two hundred stereopticon slides, several hundred microscopic slides, photographs and radiographs, with numerous charts, apparatus, instruments, etc. In the address of the president, Dr. C. T. Cooke, of Seattle, an appeal was made to the men of the West to take up research work and to strive for the ideal in the profession. It is to be regretted only that more general practitioners did not attend the meeting, as some of the borderline subjects were of much interest.

ANNUAL MEETING OF OREGON ASSOCIATION.

The annual meeting of the Oregon State Medical Association will be held in The German House, Thirteenth and Main Streets, Portland, Sept. 10-11. The officers of the association are making a special effort to have this more than an ordinarily attractive meeting. Special attention will be paid to the transaction of business and the social session rather than an entire scientific program. On Thursday evening, at 8 o'clock, a smoker will be given in the gymnasium, where athletic contests will be had and a German lunch served. On Friday the association will be the guests at a banquet given by the Portland City and County Medical Society, where, in addition to the ordinary dinner, there will be some new and unique features. For the ladies there will be rides in the sight-seeing car, receptions, and a luncheon on the 11th at the Portland Automobile Club.

NEXT MONTH'S MEETING AT NORTH YAKIMA.

At the meeting of the Washington Association at North Yakima, Sept. 21-23, some new features will be introduced in the program that it is hoped will prove an attraction to the members, resulting in a large attendance and a more extended participation on the part of those present than has occurred at some recent meetings. It has become very evident of late that it is a great mistake to prepare a program with so many papers that only a few can possibly be read and digested. While the interest is commonly maintained during the first day of the meeting, small audiences greet the speakers on the second day and, if to be rashly continued during a third day, the readers are generally chilled by empty seats. At the North Yakima meeting, therefore, but twelve papers will be scheduled. While some of these reach a variety of scientific topics, special attention will be paid to the general subject of medical economics, including the presentation and discussion of papers on the subjects of industrial insurance, medical defense, suppression of quacks and imposters, together with other subjects bearing on the daily life and business of the physician. It is believed that much benefit will accrue from an open discussion of many such points which touch the doctor in his daily life, both in contact with his patients and fellow practitioners. We are not in a position to offer a detailed program in this issue and, therefore, cannot specify the scientific topics which will be presented, but the officials wish to assure the profession of the state that something will be prepared for them at this meeting of sufficient interest to warrant the attendance in large numbers. A meeting of the association was held at North Yakima in 1892, the only previous meeting in that section of the state. Its central location offers a convenient meeting place for members of both Eastern and Western Washington. Further details of the meeting together with program will be published in our next issue.

ACTIVITIES OF THE WASHINGTON EXAMINING BOARD.

The present State Board of Medical Examiners for Washington has established a standard of examinations and other activities in purifying the profession of the state which not only deserves to attract local attention but that of other parts of the country. The scrutiny which they exercise over the applicants for license is exemplified in the recent examination, where among two hundred and nine applicants only sixty-eight were permitted to take the examination, the others being eliminated on account of presenting diplomas from low grade schools or other reasons which rendered them undesirable as practitioners for the state. If this plan be followed persistently in the future there will surely result for this state an exceptionally well-qualified class of practitioners.

During the past year the board has displayed an unprecedented amount of activity in the prosecution of quacks and irregulars of various kinds. Convictions have been obtained for various violations of the medical practice act. In addition it has revoked licenses held by men who have been guilty of various forms of unprofessional conduct or the exhibition of different grades of moral turpitude. The board announces that work along this line has only begun and that in the near future they plan to continue this campaign against the quacks and criminal members of the profession, paying especial attention to the criminal abortionists who thrive so prosperously in all of our cities. The work along these lines should appeal to the moral and ethical sense of the medical profession of the state who should sustain the board and encourage it in these efforts both by their personal support and a sympathetic attitude. We would commend to them a greater familiarity with the aims of the board and a scrutiny of its plans and accomplishments.

ANOTHER STATE ASSOCIATION JOURNAL.

The latest state medical association journal to appear is that of the Florida association, the first issue of which reached us last month. It is a very neat publication and reflects credit upon the membership from that state. This first number states that "the main object in launching this publication is to stimulate the interest of the profession in the state in organized medicine in general and the state society in particular." This in a nut-shell gives a legitimate reason for the existence of any association journal. This adds one more to the large list of journals published by state associations and is an indication that before long all of them will probably exhibit this form of representation. We wish the Florida journal success and prosperity.

MEDICAL NOTES

OREGON.

Eastern Oregon Medical Society. The following officers of this society were elected for the ensuing year at the recent meeting at Pendleton: Dr. G. W. Tape, president; Dr. I. U. Temple, first vice-president; Dr. N. D. Reber, second vice-president; Dr. T. M. Henderson, secretary-treasurer.

Dr. Guy Mount, of Oregon City, received a broken collar bone and several painful bruises when his auto was overturned on one of the rough country roads recently.

Dr. G. L. Hynson, formerly a newspaper man of Portland, has finished his medical course in Philadelphia, and after several years of hospital experience has returned to practise in his home city.

Drs. S. C. Espach, John Burkley and A. E. Younie, who formerly practised in Portland, have graduated from the Navy Medical School in Washington.

Dr. P. K. Keizer, of Portland, will locate in North Bend.

Dr. J. O. VanWinkle has resigned his position as health officer of Salem. He will be succeeded by Dr. O. B. Miles.

Dr. Richmond Kelley, of Kenelworth, who has been seriously ill with pneumonia for several weeks, is convalescing with his family at Mt. Hood.

Dr. E. A. Pierce, a member of the State Board of Health, was severely injured in a collision between his machine and an auto truck recently. He received a broken collar bone, was badly cut about the face and was unconscious for some time.

Medical Wedding. Dr. R. L. Edwards, of Woodburn, and Miss Eleanor Griffith, of Salem, have been married and will probably reside in St. Paul.

WASHINGTON.

The July Session of the Examining Board. For the examination of the Washington board, held last month in Seattle, 209 applications were received from those desiring to appear for license to practise. Following the custom which has been established, all of these were rejected except 68 on account of the low grade of schools from which they graduated or other reasons which seemed to render them undesirable as practitioners for Washington. After eliminating this large number of undesirables a class of unusual qualifications remained. All but five were successful in obtaining licenses. The names and addresses of the successful applicants appear below, all being physicians except the nine osteopaths who are so designated:

Naboth Allen, Walla Walla; A. E. Anderson, Prescott; D. S. Baughman, Seattle; J. B. Beeson, Seattle; E. L. Bennett, Seattle; T. L. Bordsen, Alexandria, Minn.; C. J. Carson, Waverly; Emily M. Clarke, D. O., Tacoma; H. J. Coventry, Seattle; J. A. Craig, Oroville; R. R. Craig, Buckhorn, Nev.; D. C. Crocker, D. O., Sunnyside; R. O. Dubois, D. O., Tacoma; G. C. Dunham, Mill City, Ore.; J. I. Durand, Seattle; M. F. Dwyer, Seattle; B. H. Earle, Port Townsend; W. A. Errickson, Seattle; J. W. Francke, Tacoma; V. P. Garst, La Plata, Miss.; N. C. Hampton, Seattle; E. E. Hardy, Kent; J. L. Harvey, Seattle; J. F. Hill, Seattle; C. C. Hill, Tacoma; Osten Holsti, Aberdeen; R. C. Howe, San Francisco, Cal.; C. A. Hughs, D. O., Bellingham; Ione S. Ingles, D. O., Seattle; G. V. Jamieson, Smyrna; W. E. Joiner, Seattle; B. L. Jones, Walla Walla; Wilhelmina J. Jongewaard, Spokane; I. N. Kelly, Pullman; F. C. Kettelkamp, Nokomis, Ill.; B. I. King, Seattle; Herman Kunze, Seattle; A. L. Kusske, Hutchinson, Minn.; C. R. Manley, Albany, Ore.; W. W. Mattson, Seattle; J. A. McFay, Seattle; C. C. Moffat, Prosser; R. A. Morse, Tacoma; H. J. Movius, Lidgerwood, N. D.; W. M. O'Shea, Spokane; B. L. Pampel, Livingstone, Mont.; R. L. Pinkerton, Seattle; E. B. Rhea, Tacoma; P. A. Rohrer, Spokane; E. V. Sheafe, Portland, Ore.; F. C. Sprowl, Spokane; I. H. Swift, D. O., Everett; M. S. Thompson, D. O., Walla Walla; J. L. Tremblay, Seattle; O. A. Thomle, Seattle; Isabell R. Tracy, D. O., Kirksville, Mo.; H. L. Tracy, D. O., Seattle; L. S. Trask, Seattle; O. R. Voss, Index; M. A. West, Winona; O. J. West, Seattle; H. E. Wilson, Connell; W. H. Wood, Tacoma.

Antityphoid Inoculation. The Health Department of Seattle has issued an order requiring that hereafter all workers on the Cedar River watershed shall receive the antityphoid inoculation. There is at present a force of about 300 men engaged upon the new dam and other industries within the district from which the city derives its water supply.

National Tuberculosis Meeting. It has been definitely announced that the National Association for the Prevention of Tuberculosis will hold its next annual meeting in Seattle. This will take place about the middle of 1915 and will be attended by three or four hundred delegates.

Lucas, the Imposter, in Seattle. One of the most successful fakers who has appeared of late in the Northwest is this man Lucas, who blows into town with the religeo-psychological graft. For some time he has successfully worked the citizens of the various cities in Washington, the past month pursuing his trade in Seattle. At first he exploits himself as a theologian and psychologist, thus appealing to the pseudo-thinkers and scientists, but soon exhibits himself as a typical exponent of the various kinds of medical fakes. The unpleasant newspaper notoriety which he has attained sounds his death knell in Seattle for the near future. The cities that have not yet been cursed by his visitation should be on the lookout for him.

Sanitary Fill for Garbage. Health Commissioner McBride, of Seattle, has decided to abandon the dumping of garbage into the Sound, and also gradually do away with its incineration. These methods are to be supplanted by the method of sanitary fills which was devised and inaugurated by Dr. Crighton.

Pacific Coast Oto-Ophthalmological Society. The following officers were elected at the recent meeting of the society in Seattle: Dr. H. G. Thomas, Oakland, Cal., president; Dr. W. K. Seelye, Seattle, Wash., vice-president; Dr. Ralph Fenton, Portland, Ore., second vice-president; Dr. C. F. Welty, San Francisco, Cal., secretary-treasurer.

Revocation of License. At the annual meeting of the State Board of Medical Examiners the licenses of six physicians practising in Washington were revoked.

Dr. James Matthews, of Spokane, whose face was severely burned by an explosion of fireworks, is slowly recovering. It was feared for some time that he would lose both of his eyes, but he is now reported out of danger.

Dr. George C. Belden, of Spokane, has been elected county physician by the commissioners to succeed Dr. B. H. Roark, who was killed in an automobile accident. The salary of the position was cut from $100 a month to $75.

Dr. E. P. Fick, of Seattle, has gone to Europe for a six months' course of study, to be spent mostly in Vienna and London.

Dr. E. R. Kelley, of Seattle, State Commissioner of Health, has returned from a two months' visit to Eastern cities, where he has made a study of health and sanitation subjects.

Dr. C. O. Reed, of Friday Harbor, returned last month from an Eastern trip devoted to postgraduate work.

Dr. John Stetson, of Seattle, has had a severe attack of septicemia, resulting from an infected hand.

Dr. L. R. Quilliam, who has for several years been physician and surgeon at the Walla Walla penitentiary, has resigned.

Dr. C. R. Castlen, formerly United States Army surgeon at Fort Columbia, has resigned and will take up private practice in Seattle.

Drs. G. B. Hampton and M. C. Hampton, of Spokane, had a narrow escape from drowning when the boat from which they were fishing was swept against the Olive Street bridge.

Dr. Kenneth Partlow, of Olympia, who has finished his medical course in the East, will be associated with his father, Dr. H. W. Partlow.

Dr. William Webb, of Winlock, sustained a loss of some six thousand dollars when his residence was destroyed by fire recently.

Dr. R. A. Gove, of Tacoma, has been appointed head of the Civil Service Board to fill the vacancy caused by the resignation of Louis Muscek.

Dr. J. A. McKay, formerly of North Dakota, will locate in Kirkland, where he has arranged to take over the practice of Dr. Baldwin, who has moved to Seattle.

Dr. N. D. Pontius, of Seattle, has gone to Europe on a professional and visiting tour. At present he is in Russia.

Marriage of Physicians. Dr. A. C. Maclennan, of Raymond, and Miss Exie Moore were married in Vancouver, June 30. Dr. C. W. Bice, of Ritzville, and Miss Wolf, of Iowa, have been married and will reside in Ritzville. Dr. G. F. Cook, of Bellingham, and Miss L. A. Minor were married in July. Dr. John B. Manning and Miss Mary Te Roller, of Seattle, were married in July. Dr. C. E. Eaton and Miss Caroline A. Bull, of Seattle, were married July 22. Dr. W. E. Joiner and Miss Alice B. Johnson, of Seattle, were married July 30.

IDAHO.

Official Visits. Last month Dr. W. F. Mitchell, president, and Dr. Ed. E. Maxey, secretary-treasurer of Idaho State Medical Association, visited the northern section of the state and organized the Bonner County Society, at Sandpoint. They failed to perfect organizations at Coeur d'Alene and Wallace. They attended meetings of North Idaho District Medical Society, at Orofino on the 10th, and of South Idaho District Society, at Boise, on the 13th.

A Laxative Cereal Food. The prevalence of constipation and the universal desire to get away from drug treatment have influenced the introduction of various laxative foods. A most efficient product, containing nutritive and laxative properties combined, is Uncle Sam's Breakfast Food, a description of which appears among our advertisements. It is being advertised to the medical profession through their official journals, with the conviction that when the physicians ascertain its effective qualities its use will become popular among their patients. Our readers can prove its qualities by using the attached coupon for samples.

CORRESPONDENCE

COMMENTS ON THE SIXTY-FIFTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

To the Editor:

Our national organization met again in Atlantic City, N. J., Junt 22-26, with a registration of 3,833, for the three days; probably over 4,000, for some wait until the last moment to mark their presence by their names. In addition to this, a number of other organizations, either subsidiary to or distinct from the A. M. A., met either the Saturday or Monday before the meeting of the greater society. At the closing session of the American Academy of Medicine, the members of which combine sociology with the practice of their profession, Dr. Woods Hutchinson, of New York, was elected president.

The weather was hot and humid, rendering the shirt-sleeve in evidence and waist-coats superfluous; so hot that, after the first day, many sections were poorly attended and papers over which authors had worked for months or years were poorly discussed, except when such had been prepared before, so, when you see a satisfactory discussion in print, be assured that the speaker read it from notes, carefully prepared in his own domicile.

The general meeting was opened by Dr. John A. Witherspoon, of Nashville, Tenn., retiring president. The incoming president, Dr. Victor C. Vaughan, of Ann Arbor, Mich., made a remarkable address after his installation. Never in the history of the association has a president committed himself upon so many drastic changes. At every one of the fifteen sessions of the different sections, revolutionary proposals were made by physicians hitherto the most conservative in the association.

Here are some of the measures advocated: (1) An increasing standard for entrance in medical schools. (2) Cooperation and coordination of the practitioner with the layman. (3) Ruthless war on proprietary concoctions, compounds and nostrums. (4) Government recognition of the fact that the transmission of disease is manslaughter and an unpardonable sin. (5) Special training for health officers in schools and colleges. (6) Uniform milk standard so far as local conditions will permit. (7) Better administration of sanitary laws and regulations.

Attorney-General John W. Westcott, of New Jersey, urged the medical profession to come out of its "separateness" and cooperate and coordinate with the public.

Gen. William Gorgas, U. S. A., was presented a gold medal by the association in recognition of his services in ridding the Panama Canal zone of disease-breeding conditions. The presentation was an impressive ceremony. Dr. C. A. L. Reed, of Cincinnati, recounted the achievements of Dr. Gorgas in Havana and Panama, mentioning also his work in international consultations, and concluding by his designation of the soldier-physician as "the man whose genius made possible the construction of the Isthmian Canal." The medal was then handed to President Witherspoon and by him conferred upon Surgeon-General Gorgas with the great audience standing and breaking into applause.

By far the most interesting feature of the score of section meetings was the announcement by Dr. Vaughan at the symposium which comprised the sections on Pathology, Physiology, Pharmacology and Therapeutics, that bacteria cannot be classified as of the vegetable kingdom. He asserted, contrary to all standard text-books on the subject, that bacteria are more akin to the animal kingdom, but he made the further assertion that he preferred to classify them separately. He stated that he had proven bacteria do not contain cellulose cells which are always present in vegetable organisms. In this connection it was stated that typhoid fever is not caused directly by the germs, but by the ferments of the bacteria, acting upon the blood and upon the cells.

That no injury of the heart, no matter how violent, should be considered hopeless, was the cheering message of Dr. Axel Worelius, of Chicago, at the section of Experimental Surgery of the Heart and Lungs. "Every part of the chest can be reached," he said, "with comparative ease and safety. Experiments made under anesthesia demonstrate that injuries of the heart, seemingly of the most desperate character, may be successfully repaired surgically, so that no injury should be considered hopeless." Experiments further demonstrate that removal of the entire heart sac caused practically no disturbance. New heart sacs are manufactured from tissues covering the intestines. Stab wounds, even multiple, entirely through the heart, caused only temporary tumultuous heart action. Knife punctures required suture and healed rapidly. The heart chambers were cut into and sutured. The trachea has been cut off and reunited, and this was far more difficult and dangerous than the heart work. Some of the animals on which the experiments were made jumped up and down on the table a half hour after the operations, showing the marvelous recuperative powers of the heart.

The salvarsan treatment for paresis, discussed at the section on Nervous and Mental Diseases, caused an acrimonious debate among physicians and surgeons who held conflicting opinions on the efficacy of the treatment. Dr. H. A. Cotton, of the New Jersey State Hospital for the Insane, precipitated the discussion by his assertion that incipient paresis could be arrested by the salvarsan treatment. "I do not claim," he said, "that the treatment we applied will cure where dementia is involved, but I am prepared to prove that there was an arrest of the attack in every case and that there were 30 per cent. of recoveries."

Dr. Moore, of Los Angeles, took issue with this statement, mentioning the "salvarsan tragedy," which stirred the entire medical world. Summoned to a hospital where experiments were made with the treatment, the speaker said he discovered one man dead, another dying, a third kept alive by artificial respiration and the rest of them writhing in fearful agony. "As you know, they all died," he said, "the last man to expire being the first to receive the treatment." Dr. Cotton took sharp issue with this statement, saying, "The Los Angeles cases were unfortunate, but I have understood from the reports I have read that salvarsan was added to the blood serum."

The startling assertion that lard was preferable to butter fat in infant feeding was made by Dr. John Zahoysky, of St. Louis, at the section on Diseases of Children. He contended that lard, in its chemical constitution, more nearly resembles the fat in human milk than butter fat, and he told of the success attending this innovation in the hospital work. "Lard contains no volatile acids," he said, "and should, therefore, cause less digestive disturbances. The young infant needs fat in large quantities and many infants cannot digest butter fat." He then told of ten infants who were fed on skimmed milk diluted, to which lard was added for varying periods and with excellent results. He also contended that in many instances lard may be used in place of butter fat to provide additional nutriment.

Dr. Mary E. Lapham, of Highlands, N. C., spoke on the prevention of tuberculosis by the periodic examination of school children, saying that practically every child in the United States, by the time it reaches maturity, is affected with tubercle bacilli and is a possible candidate for tuberculosis. "The medical inspector of our schools can protect their children," she said. "There are 20,000,000 school children and 1,000,000 have tuberculosis. To permit a child to develop tuberculosis is a blunder and a crime."

The Philadelphia County Medical Society sent Dr. Joseph F. Farrer, chairman of the Committee on Dispensary Abuses, to urge the support of the American Medical Association toward the formation of an organization that will have as its object the passage of legislation preventing applicants for medical attention and medicine receiving such aid, if it is found they are financially able to pay a physician and purchase the required medicines. "It has recently come to my knowledge," said Dr. Farrer, "that only a few years ago 10 per cent. of the physicians in Philadelphia were dispensing their own medicines, and that today the percentage has increased to 90." Half of the physicians in Philadelphia, he stated, were receiving 50 cents for office consultations, 25 per cent. of the physicians were charging only 25 cents for these consultations, and 3 per cent. were collecting only 10 cents for the same work, in order that they might keep the hospitals and dispensaries from securing their patients. He urged that there be an investigation of all who apply for dispensary aid, the licensing of all hospitals and dispensaries, placing them under state control. He further recommended the passage of legislation making it a misdemeanor for any applicant who might misrepresent his or her financial condition in order to obtain free treatment. No definite action was taken on Dr. Farrer's suggestions.

That operations to remove cancer of the eyelids have proven decidedly more effective than the use of radium, was the assertion of Dr. Carl Fisher, of Rochester, Minn., in the section on Ophthalmology. Dr. William C. Posey, of Philadelphia, before the same section, showed some remarkable results obtained by the continuous employment of mydriatics in a large number of patients afflicted with chronic glaucoma. Dr. Walter R. Parker, of Detroit, reported most favorably upon 80 trephining operations for glaucoma.

Special training for health officers was suggested by Dr. M. P. Ravenel, of Madison, Wis., chairman of the section of Preventive Medicine and Public Health. The health officer should be a "whole-time" man and should not carry on health work as a side issue. On the dangers from badly prepared and poorly served food stuffs the public health laws should make a distinction between the economic value of foods and their content of dangerous bacteria. "We should make the public realize that it is not a question of whether they are getting their money's worth of fats when they buy milk, but whether they are buying a product which may contain something injurious or even fatal. It is important that the public be educated in the proper preparation of food and the value of cleanliness."

Dr. W. C. Rucker, Assistant Surgeon-General of the U. S. Public Health Service, pointed out in a symposium on the control of leprosy that segregation and personal cleanliness are the only safeguards against leprosy. To this end he advocated a law providing for the legal commitment of lepers in a national leprosarium, established somewhere on the government's unsettled land.

"Cancer will never be conquered until the early innocent warnings are heeded and thorough examinations are immediately made by competent physicians and surgeons," said Dr. Joseph C. Bloodgood, of Baltimore, during the Section on Surgery. "There is no doubt," he continued, "that the conquest of cancer rests upon earlier recognition and better surgery. The knife and the cautery must be used. In many instances when you can't cut away, you can burn away. Fire in the treatment of cancer means, in many instances, permanent relief. Early proper treatment offers the only possible hope of a large percentage of permanent cures, even up to 100 per cent. The people and the profession should also be informed that incomplete operations in the early and more favorable stages of cancer are dangerous and do not offer as good a chance of a cure as later and more complete operations."

That operations for the removal of brain tumors are performed in this country with a resulting mortality record far below that of Europe was indicated during the opening session of the section on surgery, with Dr. Charles H. Frazier, of Philadelphia, presiding.

Dr. Howard Fussell, of Philadelphia, leading the discussion on the paper read by Dr. A. J. Rongy, of New York, on "The Treatment of Toxemia of Pregnancy," declared that it was the duty of the attending physician to have a patient under daily observation from the time of conception until the deliverance, and advocated a system of education for the patient to better equip her for the conditions she faced.

In the section on Mental and Nervous Diseases Dr. James J. Putnam, of Boston, said attempts to study the mind of the child by psycho-analysis, a method in which sex instinct was considered a powerful factor in molding character, too often called the child's attention to matters with which it was not prepared to deal and developed dangerous propensities.

Your Washington delegate participated in the discussions and nominations of officers and not only appeared with his arguments before the committee on place and time of 1915 meeting, but presented the matter to the House of Delegates, as well as interesting many of the Fellows upon their preferences and what was best for the association. Seattle, San Francisco, Denver, Atlanta and Chicago presented their invitations. Owing to the great preparations and expense made by the exposition authorities of San Francisco, and the United States government, that city was selected for 1915.

H. V. Würdemann, M. D.,
Seattle, Wash. Delegate from Washington.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England, etc., and Thomas McCrae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia, etc. In five octavo volumes of about 1,000 pages each, illustrated. Volume III. Diseases of the Digestive System—Diseases of the Urinary System. Just ready. Price per volume, cloth, $5.00, net; half morocco, $7.00, net. Lea & Febiger, Philadelphia and New York, 1914.

While there is no better English system of medicine than this, it would seem that in some instances the text has not been brought up to date in this edition fresh from the press. Thus Martin in his description of ulcer has not yet gotten away altogether from the older and painfully imperfect description of this lesion in the stomach and duodenum to be found prior to the surgeon's enlightening work. Thus but one and one-half pages are devoted to the common duodenal ulcer and thirty-three pages to gastric ulcer and, while the separate symptoms of duodenal ulcer are analyzed, yet they are not combined into a clear, classic, clinical picture, such as has been so beautifully done by Moynihan. The author, Martin, evidently does not agree with Moynihan when he writes, "The anamnesis is everything, the physical examination nothing." Martin states that "The diagnosis is made more commonly from the association of local tenderness and melena." Local tenderness occurs in many other conditions and melena is not present in more than half the cases, but a much better description is given by Stengel in a later section under diseases of the intestines. In the diagnosis of uremia, by Garrod, no mention is made of the phenolsulphonephthalein test which is today regarded as the best criterion of kidney functions and is given first place in the last edition (1913) of the text-book of the distinguished editor (Osler) of Modern Medicine in the diagnosis of uremia. Garrod also affirms that the presence of albumin in the urine and coma are important evidences of uremia and yet Cabot goes so far as to declare that coma without previous history of nephritis is never due to uremia (but usually to some head trouble) and that the presence of albumin or sugar in the urine is the rule in coma from any cause whatever. Winslow.

Diseases of the Rectum and Colon and Their Surgical Treatment. By Jerome M. Lynch, M. D., Professor of Rectal and Intestinal Surgery, New York Polyclinic; attending Surgeon, Cornell Dispensary; Fellow of the American Proctologic Society, New York Gastro-Enterological Society, etc. Octavo, 583 pages, with 228 engravings and 9 colored plates. Cloth, $5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This work contains more information than can usually be found in a book of this size. About one-fourth is devoted to first-class illustrations and photographs which are almost entirely original. The book is divided into two parts, devoted respectively to the rectum and the colon. The chapter on sacral anesthesia is of special interest, as this subject has been closely identified with Dr. Lynch's name. In the chapter on hemorrhoids the author gives his reasons for believing the clamp and cautery the best single operation for internal piles. He believes the Whitehead operation has its place in certain selected cases. The chapter on stricture of the rectum and colon contains much valuable information on the pathology of this little-understood condition. In the pages devoted to the colon we find several new subjects discussed which are not found in older works. Among these are left-sided colon, megacolon, hemorrhagic colitis, diverticulitis, prolapse of the sigmoid, short circuiting, etc. Dr. Lynch is not especially enthusiastic about the operation of iliosigmoidostomy and prefers instead a cecosigmoidostomy. It is to be hoped the next edition of this work will be in two volumes and more complete and comprehensive, as we have many hand-books along this line, but no full, comprehensive, up-to-date treatise on these diseases, such as that of Hortmann and Quenu in the French. Dr. Lynch is capable of furnishing the medical profession with such a much-needed reference work. Crookall.

Blood Pressure in Medicine and Surgery. A Guide for Students and Practitioners. By Edward H. Goodman, M. D., Associate in Medicine in the University of Pennsylvania. 12 mo, 226 pages, illustrated. Cloth, $1.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

Goodman's work, beginning with a consideration of the physics and physiology of the circulation, passes on to the technic of estimating blood pressure. Diastolic pressure is the pressure of the blood in the arteries, due to their own elasticity or constriction (systole of the artery); systolic pressure is caused by the heart's impulse added to diastolic pressure; while pulse pressure is the difference between diastolic and systolic pressures. The pulse pressure is the intermittent burden imposed upon the artery by the heart. Normally the pulse pressure is half that of the diastolic. Thus, with a normal systolic pressure of 135 and a diastolic of 90, the pulse pressure would be 45. When there is a great disparity between the systolic and diastolic pressures, as between 170 and 100, it may simply mean mental excitement in the reviewer's experience. A persistent blood pressure over 150 should always excite suspicion of chronic interstitial nephritis, even in the absence of casts and albumin. Cushing's experimental researches on blood pressure in cerebral compression are described. He always found a compensatory rise of blood pressure with increasing compression, being nature's attempt to avert cerebral anemia. Goodman emphasizes the folly of bleeding in apoplexy and thus favoring anemia of the brain by lowering blood pressure. We now have in the sphygmomanometer a third instrument of precision, in addition to the thermometer and stethescope, which is as important as they in diagnosis, prognosis and treatment, and one which has "arrived" and should be used as frequently in the routine examination of patients. Only recently, however, has digested knowledge of blood pressure accumulated sufficiently to enable one to appreciate its significance. In this book the enormous scattered literature on the subject has been gathered together and summarized by the aid of the author's skill and experience. The result is the most thorough, simple, practical and scientific treatise which has come to our notice. It is to be highly commended. Winslow.

Practical Therapeutics. By Daniel M. Hoyt, M. D., Formerly Instructor in Therapeutics, University of Pennsylvania, etc. Second Edition. Cloth, 426 pages; $5.00. C. V. Mosby Co., St. Louis, 1914.

This book is rather unusual in its contents and in arrangement and treatment of the subject. The section on the general physiologic action of drugs occupies only five pages and is too brief to be of much value. Then there are sections on prescription writing and incompatibles. Next follows a brief description of the physiologic action of the individual remedies, with toxicology and therapeutics also in summarized form, this part occupying about half of the book. The latter half is taken up by an account of the New and Non-Official Remedies which is frankly borrowed from the report of the A. M. A. The latter part of the book is formed by an index of drugs and their official preparations, arranged alphabetically and giving briefly their physical properties, uses and doses. The book shows knowledge and judgment but is too brief to be used as a text-book for students. It may be of value to the practitioner for easy reference on account of its arrangement and brevity but this latter will be disappointing to one hungering after all there is to know of the subject, and the needs of the "busy practitioner" are somewhat exaggerated and overworked. He is not always submerged; he comes up occasionally to breathe and is not in a perpetual state of delirium cordis of the mind, or mental tachycardia. WINSLOW.

The Ready Reference Hand-book of Diseases of the Skin. By George Thomas Jackson, M. D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, New York. Seventh edition, thoroughly revised. 12 mo, 770 pages, with 115 engravings and 6 colored plates. Cloth, $3.00, net. Lea & Febiger, Philadelphia and New York, 1914.

Jackson's book is too well known to need any extended description. Being arranged alphabetically, it is easy to find any desired subject. In the last edition there is an expansion of 33 pages and the new sections are those on acarodermatitis, urticariodes, cutis verticis gyrata, eczema marginatum, eczematoid dermatitis, erythema figuratum perstans, gangrosa, granuloma, coccidioides, ground itch, hemisporisis, keratodermia gonorrhoica, leukemia cutis, lichenification, lichen nitidus, lichen planus sclerosus et atrophicus and trypanosomiasis. New articles by experts are to be found on vaccines, salvarsan and x-ray. Many old sections have been wholly rewritten. The book is certainly one of the best compact expositions of dermatology. WINSLOW.

General Surgery. Practical Medicine Series Vol. II, Series 1913. Edited by John B. Murphy, A. M., M. D., LL.D. Cloth, 632 pages; $2.00. The Year Book Publishers, Chicago.

This is a splendid review of the surgery of the year by one of its masters. The amount of material for the modest sum charged for the book is extraordinary. The iodin technic has been carried to its extreme by Madden, in Egypt, who paints wounds with iodin after suturing and applies no surgical dressing and his cases do even better than when covered with sterilized gauze. The treatment of abscess by aspiration and irrigation with fresh normal horse serum is favorably spoken of by Murphy. There are many devices for direct transfusion, the simplest among which is described as the paraffine-coated glass tube. But it seems to the reviewer that removal of blood by syringe from a needle in the vein of the donor to another needle in that of the recipient is the simplest and best in affording the only method by which the quantity of blood given may be accurately measured. The matter pertaining to injuries and diseases of bone is extensive and valuable, as would naturally obtain in the hands of the leading bone surgeon. Darrach records that, in the treatment of over 2,000 fractures in Roosevelt Hospital in two years, but 5 per cent. were operated on and this is about the proportion of suitable cases. The section on abdominal surgery is most comprehensive and is enlivened by fine photographic plates, mostly emanating from the Mayo's. This annual review has become valuable.

WINSLOW.

Some American Medical Botanists. Commemorated in our Botanical Nomenclature. By Howard A. Kelly, M. D., LL.D. Cloth, 215 pages, $3. The Southworth Company, Troy, N. Y.

This is another offspring from the wonderfully active and fertile brain of Dr. Kelly. Many of the leading botanists of this country have been physicians and this book commemorates their lives and perpetuates the fragrance of their memories, as do the names of many flowers, such as wistaria, gardenia, mitchella, etc. For some botany was their life work, as in the case of Asa Gray, while for others it was but a hobby. The brief biographies are sprightly and the setting is beautifully well done, as in all of Dr. Kelly's books. There are portraits of the characters described and also illustrations of plants discovered by them, both in sepia on cameo paper, while the text is printed on old Stratford paper. WINSLOW.

The Practice of Pediatrics. By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 pages, 139 illustrations. Cloth, $6.00 net; half morocco, $7.50 net. Philadelphia and London: W. B. Saunders Company, 1914.

Those interested in the treatment of disease in children are all familiar with this work. The original purpose of the author in the earlier edition, of producing a book on treatment, is quite closely followed and detailed methods of management are increased and brought forward to meet new advance in the science. The fact that this work formerly has been confined entirely to treatment has given it an unique place among the many recent volumes published on disease in infancy and childhood, and no doubt is the keynote of its great popularity. The possibilities of usefulness are so great, restricted mostly to treatment of children, that one cannot help wishing that future editions will be strictly along these lines. MANNING.

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ORIGINAL CONTRIBUTIONS

PERSONAL EXPERIENCES WITH RADIUM IN THE TREATMENT OF CANCER AND OTHER MORBID GROWTHS.

By Kenneth A. J. Mackenzie, M. D.
PORTLAND, ORE.

In 1910, while visiting the clinics in the city of Paris, I had occasion over a period of three months to observe in the Laboratoire Biologique du Radium the treatment of cancer and other growths by radium. I had heard and read a great deal of its therapeutic uses and regarded with doubt the efficacy of the emanations of radium in causing tumors of different kind to disappear.

This attitude of doubt pursued me until I had opportunities of observing the treatment of these diseases from day to day. One of the first cases was an epithelial cancer affecting the ala of the nose which had been partially destroyed by the disease. At the same time I observed a rodent ulcer affecting the eyelid at the outer canthus, covering an area of two inches and threatening the destruction of the eye. I watched these two cases and noted after the first two or three days of treatment a perceptible improvement which continued slowly but steadily, so that at the end of about ten weeks the growths had entirely disappeared, leaving little or no tract behind.

I witnessed also several striking cases of angioma in little children affecting different parts of the head; one particularly occupied a position at the end of the nose, another the lobe of the ear, another on the hairy scalp, all of them prominently placed, elevated above the level of the skin and showing signs of rapid growth. The treatment of these cases was observed from day to day until they disappeared without a stain on the skin left to tell that they had ever existed.

Several cases of keloid were noted in scars, the result of burns, which possessed all the characters of new growths, especially those of proliferation and recurrence. Not one of these cases failed to respond to the curative action of radium.

Some very striking results were observed in the treatment of the different forms of lupus, the so-called tuberculous type, and also lupus erythematosus. In several of the surgical clinics in Paris radium was used as a measure of prevention after large operations designed for the removal of cancer affecting the various organs. Professor Delbet, after removing a cancer of the breast which was very extensive and adherent with involvement of the glands in the axilla, placed a tube containing radium in that part of the wound which was most involved, the motive being to destroy, by the selective action of radium, any tissues or cells that might tend to cause reinfection or recurrence. In several operations for extirpation of cancer of the tongue and jaw with glandular metastases, the same operator utilized radium and placed it where he deemed it likely to do the most good.

In operations upon the uterus, where the cervix was the seat of cancer, following the resection that was necessary, radium of great activity was placed within the uterine canal to destroy any remnant of the disease and prevent its recurrence. In cancer of the hollow viscera, the stomach, the pylorus, the rectum, etc., following operations for the radical extirpation of the disease, tubes of radium were placed for the same purpose and retained for twenty-four hours or longer.

In many cases, where recurrence had ensued after an operation, the initial nodules were treated by exposure to radium placed in proper apparatus for its direct application.

Radium has been extensively used in inoperable sarcoma and carcinoma by burying it in metallic tubes in the central parts of these growths. Dr. Robert Abbe, of New York, has reported one case of sarcoma of the kidney, in which radium was placed centrally in the organ with the result that the tumor disappeared. He has used it extensively in many situations, using it always with discrimination and due conservatism.

The use of radium is not advocated in all cases of cancer by even its most enthusiastic exponents. The first thought always should be the earliest extirpation of the disease and upon this principle must rest the hope of its cure and its prevention. There are many conditions, however, in early cancer in which radium possesses wonderful advantage over all other methods of treatment. It is rapid, radical and searching and, having a deeper penetration than even the knife, it reaches safely the concealed depths and the lurking places of the disease and eradicates it. It inflicts no shock; its operations are painless; no danger attends its use and it leaves no disfiguring marks.

All forms of cancer which affect the surface of the body, no matter what their situation may be, offer the most attractive opportunities for treatment by radium. An epithelial cancer situated at the angle of the eye, the ala or bridge of the nose, or at the angle of the mouth, which are common situations, there being no metastatic deposit, yield promptly to radium without leaving any disfiguring scar behind. Under the same conditions the surgeon's knife would mutilate and disfigure.

Radium possesses a very striking action upon new growths or ulcers which are caused by tuberculosis, and very wonderful results are obtained even in cases in which the lymphatic glands become the seat of this process. The Germans have very strongly advocated the constitutional treatment of tuberculosis in all cases where the disease is local, in association with x-ray therapy. The rays of radium, or some of them, are identical in character with the x-ray and it is, therefore, not surprising that radium should have such a striking selective action upon the same tissues.

The minor uses of radium are very well illustrated in the treatment of the ordinary wart which disappears very quickly after a few exposures to the mixed rays. In the same manner many moles, small dermoid tumors and flat, pigmented vascular stains upon the skin are readily destroyed by exposure to a properly selected radium apparatus. Remarkable results are obtained in the treatment of inveterate forms of circumscribed skin disease, such as ancient patches of psoriasis and eczema, and, when all other means have failed, radium has relieved the most intractable forms of pruritus.

Radium will even reach, when adapted properly, malignant processes deeply situated in the body. I recently treated a case of cancer of the lower jaw which was regarded as inoperable by the surgeon who referred the case and, regarding it as inoperable myself, I applied, without fear of the consequences, a small apparatus of radium at its full strength. After many days and weeks it finally yielded completely to treatment. Dr. Waffle, of Astoria, in whose hands the patient is at the present time, reported not long since that the disease was evidently conquered. It would have been better, however, if the exposure had been continued for a longer time.

A superficial epithelioma affecting the bridge of the nose, which came to my service from Idaho and which had penetrated the bone, yielded after one hundred and fifty hours of exposure, at the rate of five hours per day. The results were not apparent, however, until three months afterwards, when the report came that the disease had vanished and that there was no scar left to tell the tale.

A very striking result was noted in a case of angioma, or, as it is better described, an arteriovenous nevus of the scalp, referred to me for treatment by Dr. Bodine, of Portland, because operation was deemed to be dangerous. The tumor was as large as a walnut and growing very rapidly. I hesitated at first to use the requisite strength of the radium apparatus for fear of the danger of causing a radium burn, so that the tumor continued to grow despite the treatment. Emboldened by the failure, I attacked the disease without filtration of the apparatus; thereupon the tumor began to yield perceptibly from day to day. Fearing again the hazard of a burn, I withdrew the treatment and immediately the tumor began again to show signs of rapid growth. Realizing that courage was essential in the treatment of the case, I now used the radium with greater strength and more prolonged applications with the result that in the course of three or four more weeks the tumor disappeared leaving no vestige behind.

Radium has wonderful influence in relieving local pains and I have known persistent neuralgias to be relieved by a few repeated applications. In two or three cases of intractable irritation of the bladder, attended with the formation of caruncles, I witnessed complete relief of the symptoms with the disappearance of these growths.

Radium, by the use of its destructive rays, can be utilized to destroy pigmentary nevi. It is said that, whenever a pigmented mole undergoes malignant degeneration, it is incurable and always destroys life. I have recently seen in St. Vincent's Hospital a striking example of this kind. A young woman in the flower of youth had a pigmented mole on the back in the intrascapular space. Because of irritation a local surgeon removed it but within a few days it recurred and many pigmented papules appeared in the region of the scar. The disease then became acutely systemic and, when the young woman entered the hospital, she rapidly developed colossal enlargement of the liver and spleen and died in two weeks. No postmortem examination was allowed but it is reasonably certain that the internal organs were the seat of a most virulent form of carcinoma.

On tawny and coffee colored patches found upon the surface of the body, which are hairless and extensive in area, radium has no particular effect, whereas, on all hairy, deeply colored tumors, commonly known as moles, the destructive or caustic action of radium is very effective, and, in the treatment of those hairy nevi, known as "beauty spots," which are prominent and thickly covered with hair, its levelling and depilatory action is of great value. It is well known that such growths not infrequently undergo malignant transformation and it is comforting to know that radium prevents this tendency.

After the removal of the crusts and scales of a cancer, an exposure of its surface to a radium apparatus of moderate but sufficient strength for one hour causes the surface on the next day to be less moist and less irritable. The second application three or four days later shows a modification in size as if it were shrinking, and on succeeding days it would seem that the growth gradually disappears by absorption, leaving ultimately a smooth uniform cicatrix, a trifle paler in color than the surrounding tissue.

Many opportunities have been offered to me to observe the practical disappearance of epitheliomata or rodent ulcers in less than forty days. A local recurrence under these conditions, because of the survival of a few cells, would yield very promptly on the resumption of the treatment.

It will be seen that radium exhibits a special selective action upon certain pathologic tissues which are very quickly modified by it without the production of visible reaction, the tissues promptly undergoing regressive changes and disappearing apparently by absorption. The French physicians, Wickham, Degrais and Dominici, who were the first to develop a radium therapy, have taken from the beginning a most conservative attitude in its use. They have not attempted to utilize the remedy for their own selfish ends, nor have they capitalized radium and reduced it, as others have, to an agency with which to exploit for gain those who are afflicted with cancer.

As I observed in the cases which were treated in the Laboratoire Biologique du Radium, in Paris, those which were amenable to treatment by radium were separated from those which were not and treated accordingly. I have known Dr. Wickham a great many times to tell men and women suffering from advanced cancer that radium could not possibly cure them. When radium was used in advanced cases it was used for the topical effect, just as other agencies are used for the relief of pain.

The German profession has been somewhat critical in its attitude to radium and in the more recent discussions on the subject its tendency has been to minimize, if not to discredit, its uses rather than to assign to it its sphere of usefulness. The English profession, in London, who are in possession of a very considerable amount of radium, adopt an attitude of extreme conservatism and their endeavor seems to be at present technical and experimental, so that they shall solve for themselves the relationship of radium to the treatment of cancer and other disorders. The last report from the London Hospital would indicate a somewhat hopeful view of the uses of radium in all early manifestations.

Radium is too expensive to be adopted generally by professional men and it is very doubtful if the cost of production will be very materially diminished. Its cost depends upon the operations which are necessary for its preparation which are numerous and complicated, including mechanical and chemical treatment and fractionization. In order to procure two to five centigrammes, or less than one grain apothecaries weight, of pure radium, it is necessary to treat one ton of the ore, pitch blend, with five tons of chemical products and fifty tons of water.

The study of radium involves the study of two important principles, the rays and the emanations. Curie and Becquerel have been able to distinguish three kinds of the former, known respectively as alpha, beta and gamma rays.

The alpha rays are invisible but capable of being made manifest. They are supposed to be material resembling the hydrogen atom. In nature they are similar to the anode rays of a Crookes tube, possessing, however, a greater power of penetration. Their velocity is a twentieth that of light. They constitute 90 per cent. of the radiation emitted from naked radium, are very easily absorbed and readily intercepted by a thin layer of rubber, lead or aluminum.

The beta rays resemble the cathode rays of the Crookes tube but possess five hundred times their power of penetration. They are said to be material atoms, although some authorities regard them as possessing properties midway between matter and ether, while other authorities regard them as the primordial atom of electricity. The beta rays are charged with negative electricity and exist in the proportion of 9 per cent. of the radiation emitted from naked radium.

The beta rays form an irregular group, varying in size, velocity and penetration; thus, some resemble the alpha rays and are known as soft beta rays. Others, classified as hard beta rays, are composed of particles of extreme tenuity and possess velocity equal to that of light. There are also intermediate rays known as medium beta rays which, because of their tenuity and velocity, traverse substances readily but unequally with reference to the variety. Thus, soft beta like alpha rays are readily absorbed; hard beta rays, on the contrary, according to Ramsey, are capable of traversing 5 mm. of lead. According to Sagnac, there are secondary beta rays which are developed as the result of the action of gamma rays on encountering the resistance of matter, such as metallic filters.

Gamma rays are said to be similar to the x-rays and possess velocity equal to that of light and are not deviated by the magnet. They have properties of extreme penetration, being able to pass through 10 cm. of lead. With a sufficient quantity of pure radium it has been demonstrated that the Gamma rays can penetrate the body of a man through the thorax. They form 1 per cent. of the radiation from naked radium.

With this knowledge of the physical properties of the different rays it will be plain why they possess their extraordinary power of penetration, and it will also be clear why the larger and slower alpha rays do not penetrate as deeply as the beta rays, and why the beta rays, because of their varying powers, possess different degrees of penetration, and why the gamma rays traverse great obstacles readily.

The mechanism of penetration is based upon the atomic theory and the existence of interatomic spaces. The rays of radium, being of infinitely smaller dimensions than the atoms of the bodies with which they come in contact, their size and velocity enable them to glide through the interatomic spaces of these bodies.

Although the range of experience of the writer has been limited, he can point with great satisfaction to the treatment of a very considerable group of cases which, treated by radium, have shown very striking results, the best having been obtained in the treatment of malignant diseases, especially cancers. The complete list, however, includes also cases of sarcoma, rodent ulcer, angioma or nevi of different kinds, especially the prominent arteriovenous variety, pigmentary nevi, keloids and disfiguring scars, lupus, the tubercular form, and lupus erythematosus, inveterate and chronic patches of skin disease, urethral caruncles, warts, moles and certain chronic neuralgias. It is the intention of the writer at a later date, when a larger number of cases has been treated, to differentiate these various groups and present them in statistical array.

In practically nearly all the cases treated, which have been selected with care, an apparent complete cure has been the result, and up to the present time no case has been encountered in which recurrence has taken place.

ETHER ANESTHESIA.*

By G. L. Closson, M. D.
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It may be an assumption on the part of many that the field of general anesthesia, insofar as it concerns ether and its administration, has been so thoroughly studied and exploited as to leave little fallow ground awaiting the student or experimenter in this branch of medicine. However, no less an authority on this subject than Dr. Gwathmey, of New York, has recently stated he believes we are still on the threshold of the subject of general and local anesthesia and that we have much to learn regarding ether and the use of other drugs, as well as means and methods in the induction of surgical anesthesia. Surely one does not feel like taking issue with him especially if his recent articles describing ether-oil-colonic anesthesia have been read.

Today over the work of the general anesthetist bulks large the growing shadow of a new workman, with new tools and a new way. With the contagious enthusiasm of the pioneer he proclaims his local anesthesia as a sine qua non and so vehemently that many profess to believe he will soon relegate the general anesthetist to the dusty shelf, to there repose with the rusty phlebotomy knife for a bedfellow.

Admitting that the day is fast approaching when the services of the doctor who gives ether can be dispensed with, at the current moment, if a good workman familiar with his tools and his own fallibility, he is a God-send to every poor unfortunate compelled to undergo an ordeal, ninety-nine times out of a hundred far greater dreaded than the operation that brings him to your care. It is here that a little reflection should impress upon each of you the tremendous importance of the position you occupy as an anesthetizer —in the eyes of the patient and his family—and that is the only viewpoint worthy of consideration.

You are the captain of a ship with a single passenger, for whose safety you will be held responsible. The surgeon with all his skill is but an expert mechanician, called in to repair something broken. Upon you devolves the duty of keeping the engines of this ship running, the heart and respiration, and so well handled that they will continue to run undamaged long after the repair work is completed.

One cannot measure the influence for good the attitude and assurance of the physician giving the anesthetic can have in lessening or abolishing fear and dread from the mind of an anxious patient. Fear ranks high as a potent influence, synergistic with the other factors that induce shock. And shock is the shadow of the grim reaper in the operating room. This is the great foe that Crile, in his advocacy and defense of anoci-association, believes he has conquered.

All measures that operate to render more simple the administration of ether, as well as to lessen its harmful effects on the respiratory and circulatory apparatus, should be worthy of our consideration and adoption. By this is not implied that one should be continually experimenting for, as one writer has expressed it, "experimentation in methods of anesthesia ought to be most conservative as we are primarily considering the safety and comfort of the patient." Better should we study to perfect the simplest means necessary to induce surgical anesthesia; more of real service to strive to improve our technic that the least amount of the anesthetic may be used, consonant with an even anesthesia.

Surgical ether anesthesia has been defined as depending on the establishment in the blood and tissues of a definite ether tension corresponding to about 15 per cent. of ether vapor in the alveolar air. Physiologically the same tension of ether vapor produces in all subjects the same depth of anesthesia. Heat increases and cold diminishes this percentage of ether tension and, upon all the factors that modify this physical law, must rest the efficiency of our apparatus and procedure. In other words, the means we adopt to prevent cooling the inspired ether vapor increases its safety as well as minimizing the amount necessary to employ.

In a practical way and for our consideration we need only to mention the cooling effect of respiration on ether vapor to appreciate the desirability of quiet, normal breathing as in natural sleep. The maintenance of this type of respiration is essential, not only to the patient's welfare respecting the amount of anesthetic inhaled, but it contributes greatly to the comfort and expediency of the surgeon's work.

The work of the anesthetist, to a certain extent, is modified by his personality, by his habits and usages of various props upon which he leans, and these in turn come after a time to influence his methods and opinions.

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Of late years has arisen the custom of administering to the patient, one to one-half hour before taking the anesthetic, morphin and atropin, pantopon, paraldehyde or hedonal. These drugs help greatly to lessen apprehensive fears and diminish the secretions of the respiratory tract. Their use should become as much a part of the ante-anesthetic preparation as the emptying of the stomach or bowels. Efforts to regulate the respiration as a means to increase the temperature of the inspired ether vapor can be termed negative, compared with positive measures as in the use of apparauts designed directly to heat ether vapor before inhalation.

It is not the purpose of this paper to claim superiority of this or that method of anesthesia over some other or to assume that perfection has been attained in the methods mentioned, but rather to bring to your attention a few observations, taken from the notes of a series of anesthesias given by the Hoffman or drop method and briefly comparing them with data from cases anesthetized with a modification of the Gwathmey apparatus whereby the ether is heated and washed before inhalation. Probably the greater number of anesthesias are given today by the Hoffman or drop method, using an Esmarch or similar mask, covered with from twelve to sixteen layers of gauze, around which can be wrapped a towel wrung out of hot water. With proper preparation of the patient this is nearly an ideal method and such annoyances as cyanosis, swallowing the tongue, paralysis of the epiglottis or accumulation of mucus virtually never occur.

Using this method the following statistics are offered: Females, ages from 6 to 68 years, have averaged ten and one-half minutes of time and forty cc. of ether to induce light, surgical anesthesia. Per hour the average amount of ether used has been one hundred and fifty-eight cc. Brunettes take a trifle longer to put to sleep and require twelve cc. more of ether to the hour. Males, from 9 months to 76 years old, have averaged fourteen and one-half minutes of time and sixty-five cc. of ether to put to sleep. Per hour the average amount of ether used was two hundred and twenty-five cc. Dr. Prudden, of Duluth, has recently reported on three hundred cases by this method and states that the average time to induce narcosis was six and one-third minutes, using sixty cc. of ether and averaging two hundred cc. to the operation.

Employing a modification of the Gwathmey apparatus mentioned above, that heats as well as washes the ether vapor, these figures are submitted. In one hundred and fifty cases of both sexes, from 6 to 77 years of age, the total average amount of ether used to the hour has been eighty-eight cc., a trifle less than three ounces. All these cases were put to sleep by the Hoffman drop method and then switched to the vapor apparatus on the operating table.

If it be possible to fix attention and interest on a table of figures, those most interesting and striking in this comparison must be the total ether used per hour; in one case, by the drop method, one hundred and ninety-seven cc., and in the other, using heated ether, eighty-eight cc. This great difference in the total amount of ether used is emphasized as the most apparent feature between these two methods because if the same skill and preparation be employed in analogous cases, by either procedure the results, during the operation and post-anesthetic, will be nearly identical. There is one exception, however, that might be used as the chief argument in favor of heated ether. That is, by its use, we have greatly lessened the possibility of bronchitis and pneumonia, respecting which no other method of ether inhalation can compare.

The incidence of pneumonia, following operations where ether has been the anesthetic used, is a much debated one. Dr. Herb, anesthetist to the Presbyterian Hospital, of Chicago, says: "Many post-operative pneumonias have nothing to do with the ether but are embolic and occur quite as frequently after local as general anesthesia."

Again, there is much to support the Gussenbauer-Peitrozowski theory "that a pneumonia, following operations under general anesthesia as well as local, depends for its causative factor on emboli reaching the lungs either through the liver or directly through communication between the portal vein and twigs of the inferior vena cava. These infarcts, so formed in the lungs, without being primarily infected may be secondarily from the air passages."

Aspiration pneumonia is an accident and should never occur. It is a considerable danger, however, in emergency anesthesias, where there has been no time or opportunity to empty the stomach. It is my personal opinion, eliminating such, that a pneumonia or even a bronchitis, following a careful administration of ether, can rarely be attributed to that drug.

The contraindications are many or few, depending on a skilful or careless anesthetist. To follow this statement by saying, I believe them few, may sound egotistical; but it is my opinion and to cite a few cases in support of this opinion perhaps will condone an apparent conceit.

Female, 32. Dilated right heart; casts and albumin in urine. Eclampsia with birth of last child (recent). Blood-pressure 225. Time of etherization one hour and thirty minutes. Pulse before operation, 80, at close 84.

Female, 67. German. Alcoholic, very fleshy. Dilated right heart with mitral insufficiency, albuminuria. Pulse weak, 100. Duration of anesthesia, one hour.

Male, 32. Cystoscopy demonstrated pus from both ureters, pyonephrosis, right kidney opened with removal of large calculus. On table one hour and twenty minutes. Gave 80 cc.

Convalescence of these cases uneventful.

Reference should be made to the influences affecting not only the amount of ether necessary to use but to factors causing variations in the depth of narcosis. Children in proportion to body weight take more ether than adults. In the latter the amount of ether necessary to employ bears a direct relation to the weight of the individual.

Fear in a woman lessens the amount of ether used to induce sleep; in the male the reverse is the rule. The psychologist may account for this contrast by claiming that man, through shame, crowds this feeling into his subconscious mind and when released by ether, like all suppressed emotions, it does violence to and temporarily controls the higher centers. Its objective manifestation is evinced in a secondary stage of great excitement and often profane language.

The nature of the operation is the greatest single element governing the amount of ether taken. Probably at the head of the list, necessitating the most ether, stands operative work on the brain. Then come skin grafting, operations on the cervix uteri and perineum, hemorrhoids, handling the intestines and traction exerted on the parietal peritoneum and diaphragm, down to the least amount required, in work on the long bones and joints.

The Trendelenburg position for any considerable length of time increases the consumption of ether and induces cyanosis. It is positively dangerous in arteriosclerosis and high blood-pressures. One quite noted Eastern gynecologist has stated that "a very simple way to kill a fat woman is to put her in the Trendelenburg position and continue giving her ether for half an hour." He does not explain, however, in such a calamity, where the censure would rest, on the position or anesthetist.

Of the accidents of ether anesthesia you are all familiar, as well as with the treatment necessary, but there are two points worthy of mention. To produce a quick though fleeting stimulant effect on the heart and circulation, adrenalin and camphor oil are of the greatest value. In vomiting while a patient is unconscious, after turning the head to one side, *never* push forward the angle of the jaw. This is often done. Such thoughtlessness opens the epiglottis, the particular thing you wish to avoid.

It is a minor consideration, the amount of ether employed, but of vital consequence is the actual quantity passing through the blood and tissues of a patient. Unfortunately, it is absolutely impossible to measure this in definite terms. We are compelled to resort to the objective symptoms noted subsequent to the anesthesia. These manifest themselves in a variety of ways, as changes in blood pressure, disturbing the heart and circulation; derangements of the central and sympathetic nervous system; irritation of the respiratory and digestive tracts; and last, but of great importance, alterations, temporary or permanent, in the excretory organs, the liver and kidneys. We are driven to the use of such nomenclature as acidosis, acetonuria, acapnia and the like to express conditions directly attributable to the harmful effects of the anesthetic.

Upon ether, properly administered, falls little such reproachful terms. It is a safe anesthetic and at all stages of anesthesia, its margin of safety being wide. So great an authority as Kocher, after mentioning its contraindications, makes this unqualified statement: "If the patient's body be kept warm and the stomach empty, ether anesthesia, properly administered, presents no risk of an accident."

Public Health Work as a Career. J. A. Ferrell, Washington, D. C. (Journal A. M. A., Aug. 22, 1914), points out the advantages of public health work as a career for the young physician. A public health officer is an efficiency engineer in the most important department of life.

NITROUS OXID AND OXYGEN ANESTHESIA.*

By H. Logan Geary, D. D. S.
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The combination of nitrous oxid and oxygen gases as an anesthetic agent is comparatively new, although nitrous oxid alone or in combination with air has been used with more or less success since 1844. In that year Mr. Colton, an itinerant chemist, was giving public exhibitions and lectures on chemistry in Hartford, Conn. Horace Wells, a dentist of that city, attended Colton's exhibition and noticed that one of the individuals injured himself by falling against a table after he had inhaled a sample of the gas. Upon recovery the man claimed there was no pain at the time of injury. This put Wells to thinking and at his request Mr. Colton administered the gas to him and Dr. Riggs, of Hartford, extracted a large molar tooth, without even as much pain as the prick of a pin.

Wells was so elated over his great discovery he then attempted to give a public demonstration at the Boston General Hospital which proved a complete failure, due no doubt to the necessarily crude apparatus for administering at that time, and the fact that the gas was not in as pure a state as we now have it. Wells' failure and the fact that he died shortly afterwards put nitrous oxid into obscurity for nearly twenty years, when it was again taken up by the dental profession as an anesthetic for the extraction of teeth. In the interval, however, ether and chloroform had both won places as anesthetics and had been taken up by the medical profession. A little later some German and English scientists made investigations which eventually led to the adoption of nitrous oxid for short surgical operations and as a preliminary to ether.

From that time until the present this anesthetic has had a checkered but progressive career. While Dr. Charles K. Teter, a dentist of Cleveland, has done more than any one man to give both the medical and dental professions the successful technic which should be followed today, and was the first man to design and place upon the market a Twentieth Century apparatus both for the manufacture and administration of the gas, we must give to Dr. E. Andrews, a Chicago physician, due credit for his experiments and demonstrations with this gas and the addition of pure oxygen.

I will not take up the chemical and physical properties of these gases, as you are all familiar with that phase of the subject. Of the physiologic action of nitrous oxid it can be said that it possesses anesthetic properties as truly as chloroform or ether. Just how this is brought about we do not know but it is generally supposed to be the result of the protoplasmic changes in the nerve cells. There were two theories early advanced, both of which have been disproven. The first taught that anesthesia was produced by hyperoxidation. This we now know is wrong, because nitrous oxid is not broken up into its original elements when absorbed by the blood but, on the contrary, when taken into the circulation it is inhaled as nitrous oxid and exhaled absolutely unchanged, so the theory of hyperoxidation is clearly untenable. The other theory taught the deoxidation of the blood, a view even more dangerous than the first, as it was believed that asphyxia was necessary before anesthesia could be produced but this oxygen starvation theory is also wrong. You who are practising anesthetics are every day demonstrating clinically the error of this theory, and it is upon the correct and clear understanding of this last false theory that one's success as a nitrous oxid and oxygen anesthetist depends.

You may believe most anything else you wish about the physiologic action of this anesthetic because no one knows exactly how anesthesia is produced, but you must know that, to produce a prolonged anesthesia free from muscular spasm and as smooth and tranquil as that produced by any other anesthetic cyanosis or other evidences of asphyxia you should not have because it is possible to produce a beautiful anesthesia without any of these symptoms. However, the respiration is not always the first to be over-anesthetized. I have seen cases wherein it seemed the heart was slowed and depressed before cyanosis appeared, but I believe that in the great majority of cases the respiratory center is the first to succumb and that, in cases where circulatory depression arises, they occur as a sequel of faulty respiration. The remedy for these phenomena of danger is oxygen which you should always have ready and, if you are using an up-to-date apparatus and are up in the technic, it always is ready.

Numerous experiments conclusively prove the value of pure oxygen. A dog has been confined in a reservoir for three days, breathing 85 per cent. nitrous oxid and 15 per cent. oxygen, showing that the gases were respirable for an indefinite period without injury to respiration or circulation. Sprouting seeds fail to grow, when confined in the gas alone, but will germinate when pure oxygen is added.

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From a report of experimental and clinical research work into nitrous oxid vs. ether anesthesia, by Dr. George W. Crile and assistants I quote the following: "In overdose nitrous oxid causes death by a combination of asphyxia and cardio-inhibition. When the inhibition is controlled by atropin or scopolamin, death may occur by asphyxia alone. Nitrous oxid, too, in overdose may inhibit respiration. Muscular tone is diminished far less under nitrous oxid than under ether anesthesia. The animal comes out of the anesthetic immediately, quite regardless of the duration of the anesthesia. And repeated anesthesia seems to develop no immunity.

"Its action being quick and its effect evanescent, nitrous oxid anesthesia runs the entire gamut from slight to fatal anesthesia with remarkable celerity. Its best administration is, therefore, especially difficult, requiring far more alertness and ability than ether. Indeed, a number of experiments were sacrificed to the technic of administration. There is apparently no post-anesthetic effect upon either the lungs or the kidneys, nor indeed upon any other part of the body.

"Does an animal under nitrous oxid anesthesia endure shock-producing trauma better or not so well as under ether anesthesia? Here the difference is so striking that doubt lingered not at all. The nitrous oxid animals resisted shock-producing trauma far better than did the ether animals. Then, too, in handicapped animals, i. e., animals reduced by infections, hemorrhage or hyperthyroidism, the nitrous oxid showed a marked advantage over ether."

Dr. Hewitt, of London, says: "There is no form of anesthesia at present known which is so devoid of danger as that which results from nitrous oxid when administered with a sufficient percentage of oxygen to prevent asphyxia or asphyxial complications."

Dr. C. B. Parker, a surgeon of Cleveland, who used nitrous oxid and oxygen for a number of years in his routine surgical work, has reported a number of cases in nitrous oxid—oxygen anesthesia which were unfavorable for any other anesthetic. Among them were patients suffering from organic diseases of the heart, kidneys and lungs, wasting and suppurative conditions, diabetes, empyema, asthma, alcoholism, also the young and old patients of greatly overweight; those who had developed alarming symptoms in the previous taking of ether or chloroform, and those who had experienced the distress of previous etherization. Many years ago Dr. Parker came to the conclusion that nitrous oxid and oxygen were safer and more agreeable and he is, therefore, using it exclusively in his work in Cleveland today.

In producing and maintaining nitrous oxid and oxygen anesthesia there are six general requirements which the anesthetist must master in order to obtain satisfactory results:

The first is a thorough knowledge of the anesthetic and a mastery of the fundamental principles involved in its administration.

The second is pure gases. It is imperative that such be used, especially when we have the life of a patient involved and, furthermore, they are necessary to maintain a satisfactory anesthesia.

Third. An even and constant flow of the gases, whereby an even narcosis may be maintained. An uneven flow produces an uneven anesthesia and increases nausea. If an even and constant flow be maintained, the patient can then be carried to the proper depth of anesthesia, and this condition continued the necessary time for the operation in hand. This is practically impossible to do unless your machine is equipped with regulators.

Fourth, rebreathing. This is almost imperative, not only in making the anesthetic safer but in creating carbon dioxid, a certain amount of which has been proven to be of great value as a respiratory stimulant. The amount of rebreathing is governed by the amount of fresh nitrous oxid allowed to enter the bag and the amount of positive pressure that is used, also the symptoms displayed by the patient. While we know that certain percentages of carbon dioxid act as a respiratory stimulant, we have found to our sorrow that, if too much be employed, carbon dioxid asphyxiation will result.

We have considerable trouble in differentiating between carbon dioxid and nitrous oxid asphyxia. As every case is a law unto itself, only the school of experience will tell the anesthetist how far to carry rebreathing. It must be governed by the symptoms displayed by each individual patient.

A frail, anemic patient, for instance, will tolerate an exceptional amount of rebreathing. In a general way, should your carbon dioxid be of too high a percentage, the patient will manifest forced respiration, followed by perspiring, slowness of the pulse, and livid appearance, ending in cessation of respiration. If oxygen be suddenly increased at this time to reduce the carbon dioxid percentage, the anesthesia will at once become light in character and interfere with the operation. To be sure the oxygen must be increased, but at the same time fresh nitrous oxid must enter the bag in order to supply the patient with the proper volume to maintain surgical anesthesia. A robust, muscular patient will tolerate only a small amount of rebreathing as compared with a delicate patient.

The fifth requirement is positive pressure. This is where the gases are given under pressure in order to force the lungs to absorb more of the anesthetic mixture, which results in a deeper narcosis. This is accomplished by the adjustments which rest upon the respiratory disc in the inhaler. This pressure must be governed entirely by the symptoms displayed by the patient. It has been demonstrated that, by taking this pressure off the respiratory valve, allowing the gases to come out from under pressure, thus maintaining atmospheric pressure, the anesthesia at once becomes too light for any surgical work, due to the fact that not so much of the anesthetic was taken up by the blood stream and carried to the brain. It is certainly reasonable to think that, when the gases are delivered to the delicate tissues of the lungs under pressure, a greater amount will be absorbed than when the ordinary atmospheric pressure is used.

Let me call your attention to the reason why so many of our anesthetics for tonsils and adenoids and prolonged dental operations are not as smooth and tranquil as we would like them to be. In these cases positive pressure and rebreathing can only be employed during the stage of induction, when the patient's mouth is covered with the rubber to prevent mouth breathing, it being understood that these cases call for the use of the nasal inhaler, leaving the field in the mouth free for the operator. Just the minute it is necessary to uncover the mouth, just that minute rebreathing and positive pressure are lost, due to the fact that the patient will breathe through the opening of the least resistance which is the mouth. Now it is necessary to increase the pressure in the bags to an amount over atmospheric pressure, in an effort to prevent mouth breathing. Please understand that there is a great difference between positive pressure plus rebreathing, and the pressure which has to be maintained when the nasal inhaler is employed with the patient's mouth open.

Warm gases is the sixth requirement for the best results with this anesthetic. The nitrous oxid is placed in the cylinders under such intense pressure that it is liquified. When it is released it rapidly transforms to a gas, thus becoming very low in temperature. It stands to reason that the temperature should be raised to near that of the body before it is inhaled by the patient. Warm gas removes the chance of post-operative bronchitis and pneumonia and a much deeper and more tranquil anesthesia is obtained.

Slight cyanosis is often present with deep nitrous oxid and oxygen anesthesia but has no significance and, therefore, may be disregarded, provided the patient has no pathologic conditions which would contraindicate any rise of blood pressure. However, cyanosis must not be permitted for any length of time.

I will endeavor to enumerate the many advantages of nitrous oxid oxygen anesthesia:

(1) Comfort of the patient during the period of induction and elimination, plus the absence of post-anesthetic vomiting. The patient passes quickly and very quietly into deep anesthesia and in the majority of cases surgical anesthesia may be induced within three minutes.

(2) It has practically no odor and, when administered to the patient warm, with oxygen in the proper percentage, he is hardly aware that he is taking an anesthetic, especially if he has ever taken ether or chloroform.

(3) Nausea rarely occurs when there are no other nausea-producing factors.

(4) It is not irritating to the respiratory passages nor to the kidneys.

(5) It does not cause fatty degeneration of the liver cells, and has no effect upon the lungs, provided it is administered warm.

(6) It does not produce any harmful effects upon the phagocytes and is, therefore, indicated in infections.

(7) The patient is fully awake and in possession of his mental faculties within a few minutes after the anesthetic mask is removed.

(8) Subsequent administrations has, as a rule, no harmful effects.

(9) Its administration is indicated on patients suffering from infectious diseases and those having a low resisting power.

(10) Its rapid elimination from the system. The role of shock is far less than that of ether or chloroform.

(11) The patient is plunged into a deep surgical anesthesia within a few minutes, passing through the stage of excitement very quickly.

(12) It does not produce an accumulation of mucus and saliva.

The disadvantages of this anesthetic are very few in the hands of the highly skilled anesthetist, and they should be looked upon by the modern surgeon, not only from a scientific point of view, but from the patient's standpoint and that of a good prognosis. They may be enumerated as follows:

(1)To obtain the best results it requires a trained expert who fully understands the action of the two gases, the symptoms of the patient, the fundamental principles of anesthesia and the minute adjustment of the apparatus.

(2) Deep relaxation in some cases is not easily produced.

(3) It requires an expensive and accurate apparatus for its scientific administration and one that is equipped with an ether attachment, in which ether may be given if the occasion demands it.

(4) The anesthesia is somewhat lighter and more transient than that produced by chloroform or ether.

(5) It requires much watchfulness and skill on the part of the administrator to produce an even narcosis.

(6) Narrow zone of anesthesia with consequent uncertainty of muscular relaxation and freedom from reflex movements.

As a rule, a child of only a few years of age is not a good subject for nitrous oxid and oxygen. Children are subjects who are hypersusceptible to both nitrous oxid and oxygen. In other words, they are easily asphyxiated even from a small quantity of nitrous oxid and they readily respond to an overdose of oxygen, thus bringing them out of the anesthetic.

LOCAL ANESTHESIA.*

By Torleif Torland, M. D.
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If we exclude surface anesthesia of mucous and serous membranes and here confine ourselves only to anesthesia caused by subcutaneous injection, it may be divided into three groups: (1) Infiltration anesthesia, (2) Direct regional anesthesia (endoneural), (3) Indirect regional anesthesia (endo- and perineural).

Infiltration anesthesia is produced when the tissues are completely infiltrated with an anesthetic solution. The name originated from Schleich, and is called after him. The principle is that we inject so much of the solution that it stands under exaggerated pressure, whereby certain tissues very rapidly become anesthetic.

Schleich's great improvement was that he showed how far we can go with very diluted solutions. Effects can be noticed by solutions even as weak as 1/20 per cent. of cocain. In practice the technic consists in infiltrating each layer of tissue separately as we reach it. The skin is infiltrated in the line of incision, forming series of pale pomphi, caused by pressure of the solution within the skin. For anesthetizing the skin Schleich's normal solution of 1/10 per cent. cocain is very effective. But he was not aware of the fact that infiltration anesthesia is what we call a terminal anesthesia, the diluted solution reaching only the terminal ends of the very sensitive nerves, having no effect at all on the nerves and nerve branches in the deeper layers of the operation field.

Schleich tried, however, to produce deep anesthesia by injecting into the tissue great amounts of solution in order to increase the pressure, but without much better results. Outside the skin infiltration anesthesia, consequently, has little or no effect. The anesthesia is only apparent, as the deeper structures originally are not very sensitive to clipping and cutting. On the other hand, infiltration anesthesia will again be effective when we reach bone and periosteum, where we can inject under great pressure.

Taken all in all, it can be stated that infiltration anesthesia has a great many drawbacks. First, the effect is limited practically to the skin only and, furthermore, which is still worse, only to that very limited field which is actually infiltrated.

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That means that an inflamed part which is to be incised must be infiltrated along the line of incision. This procedure is, first, very painful and, second, dangerous due to probable spreading of the infection. Most patients with a felon, for instance, will rather have it cut without anesthesia at all.

Another drawback is the time we use in thus infiltrating the deeper layers, and to this can also be added quite extensive changes in the infiltrated tissues which confuse the anatomic conditions and landmarks, and to a certain extent make the operation difficult. Consequently, Schleich's anesthetic is now very little used. If we exclude injection in the skin for aspirations or small incisions, cutaneous anesthesia has no longer a place in modern surgery. A certain caution must also be used, as we sometimes see the intracutaneous injection of an adrenalin-cocain or novocain solution cause gangrene and sloughing of the infiltrated parts.

There is not much to say about *direct regional anesthesia*, as there are few nerves which can be reached directly through the skin. They are the supra and infraorbitals, the ulnar back of the internal condyle and the peroneal in the popliteal space and at the head of the fibula. Even to hit these nerves may be very difficult. It takes sometimes great experience and often good luck. If, however, we cut through the skin almost any nerve can be reached directly; but I think this procedure is too complicated to be practical. Probably this direct method is most used in herniotomies for inguinal hernia, where the iliohypogastric nerve can be anesthetized, running over the internal oblique muscle, after the method of Cushing. For direct nerve anesthesia we use a rather concentrated solution, usually 2 per cent. novocain with adrenalin; only a small amount is, however, necessary, ½ cc., whereby a very intensive effect can be produced.

Indirect regional anesthesia is the most important and at the present time the method of choice. With this anesthesia we understand peripheral blocking of a sensitive nerve by injecting in or near it an anesthetic solution containing adrenalin, above the place to be operated on. While Schleich's infiltration is a terminal anesthesia, this is an exclusive conductive anesthesia.

For this form of anesthesia, the following rules must be remembered: The nearer the peripheral termination of the nerve we inject and the smaller the nerve branches are, the quicker will the anesthesia begin and less concentrated solution has to be used; but in any event it will take a certain time (ten to thirty minutes) before we have full analgesia. The weaker the solution we use the longer time before anesthesia sets in. When novocain is used, ½ to 1 per cent. solution is usually sufficient, very seldom 2 per cent., and always together with adrenalin; besides this elastic compression is used above the place to be injected.

The technic is as follows: If a certain skin area is to be anesthetized, ¼ to ½ per cent. solution of novocain is used for subcutaneous injections (not intracutaneous). In this way the sensitive nerves, running through the subcutaneous tissue of the skin, are blocked, and within a quarter of an hour after injection we will have a cutaneous anesthesia of considerably larger circumference and lasting longer than if the skin were directly infiltrated.

More extensive skin analgesia can be brought on by Hackenbruch's circular injection. This consists in injecting subcutaneously round about the parts to be anesthetized—Hackenbruch's rhombus. If we are working on the limbs a transverse linear subcutaneous injection is done, which blocks the sensitive nerves peripheral to the line. If, however, sensitive terminal branches pierce through the fascia in the operation field, circular injection is unsatisfactory; subcutaneous injection must then be done under the whole field.

If, in operating on limbs, we want a complete transverse anesthesia, all sensitive nerves going through the limbs must be paralyzed. Novocain solution, 1 per cent. with adrenalin, is here injected near or into each nerve. In operations on the hands, for instance, the ulnar nerve is anesthetized back of the internal epicondyle of the humerus, or above the os pisiforme; the median nerve subfascially 5-6 cm. above the wrist, between the easily recognized tendons for the palmaris longus and flexor carpi radialis muscles; the sensitive fibres of the radial nerve for the hand can be reached subcutaneously on the radial side of forearm, about 6-8 cm. above the wrist.

Every nerve whose course can be located by anatomic landmarks can be anesthetized. If every sensitive nerve running into the operation field can be reached through the skin, full anesthesia will be effected before operation is started, and the operation can be finished just as quickly and without any stop as in general anesthesia. If some of the nerves cannot be reached from the skin, they will have to be injected as they present themselves during the operation. This is, of course, a drawback which will delay operation. It will, however, seldom happen, except when operating on the trunk of the body, never when operating on the limbs, providing the operator knows his anatomy and his technic. But on the body itself, series of repeated injections, as above mentioned, are the rule as, for instance, in herniotomies and laparotomies, where especially careful subperitoneal injection is necessary before the very sensitive parietal peritoneum is anesthetized.

Taking all in all, we can go very far with local anesthesia, also in laparotomies. Its fields here have been very much enlarged after Lennander's experiments, where he showed that the feeling of pain in the abdominal cavity is confined to parietal peritoneum only, not visceral, and to mesentery, and here only by pulling, not pressing and touch. Under certain conditions, therefore, where, for some reason or other, it is needed, a good deal of laparotomies can be done in local anesthesia alone or in a combination of general and local anesthesia.

GENERAL TECHNIC.

As in all surgical procedures, exactness and absolute sterility are essential. The syringe is a very important factor. It is impossible to get good results without an absolute patent syringe. Three points must be especially emphasized:

First, the syringe must be easily sterilized. Very few of them, however, can stand boiling for any time over and over again and still not leak. The only one is a Record syringe which, on the other hand, is very breakable and must be handled with great care. As the boiling under any circumstances is a tedious affair, I have in my own office practice almost completely dispensed with this form of sterilizing. I now always have my syringes with the point and needle immersed in the following solution, which also is drawn up into the barrel:

Lysol.	
Carbolic Acid, aa	5
Natr. Bicarb.	1
Aquae q. s. ad.	100

This has the advantage that the needle does not rust and it is always sterile. Just before using I wash out the syringe a few times with sterile water and it is then ready. I have never had in at least several thousand anesthetics, any infection from the syringe.

Second, the needles. At first I used the regular Hubb needles of standard size but in later years I have found that the so-called seamless needles (Parke, Davis & Co.) are by far the best. They can be had in almost any size. The finer the needle the less pain; they can easily be changed when broken and are inexpensive.

Third, a patent, unleakable plunger and barrel. This is very important, as we often have to use great pressure to force the solution in the tissues. There is not yet any syringe on the market which is perfect. The best one, in my opinion, is a regular 5 or 10 cc. Record syringe, with a suitable attachment for seamless needles, which I have had especially made for my own use.

As already stated, I believe novocain is preferable in every case, as it produces an intensive anesthesia without toxic symptoms, and when combined with adrenalin the effect will last several hours. As to concentration, the rule is that, for anesthesia of skin by subcutaneous injections, 1/4 to 1/2 per cent. is sufficient. For indirect regional anesthesia, 1 per cent; and, where we want to reach larger nerve trunks as the radial and median, 2 per cent. To the full amount of solution of novocain which we wish to use during one operation, is added 8-15, highest 20 drops of adrenalin (suprarenin) solution 1-1000. Without hesitation, as high as 50-100 cc. of 1 per cent., and 150-250 cc. of 1/2 per cent., can be injected in one sitting, if so much is needed. Elastic compression above the place to be injected is of great aid in prolonging the time of the anesthesia.

For office use it is practical for those using local anesthesia to a great extent to have a standard solution, usually 2 per cent., from which the weaker concentrations can be prepared. In order to keep the solution sterile mercury corros. can be added to make 1-10,000. Adrenalin is added to the solution just before use. For those who only use local anesthesia once in a while, tablets (Parke, Davis & Co.) of novocain and adrenalin are to be preferred.

During injection as few punctures as possible are made. To avoid pain the needle is [illegible] only thrust under epidermis, where a few drops are deposited, and then the point is pushed deeper and deeper in under steady injection. Freezing of a small spot of skin with chlorethyl, where the first puncture is to be made, is also of aid in avoiding pain. The line of injection must always be laid outside the inflamed parts. Never inject into inflamed tissue.

In most cases it is necessary to wait 15 to 20 minutes after injection before operation is started. There is no need of hurry; the anesthesia lasts for several hours. On the other hand, it is not always advisable to wait until the patient tells you he has no feeling. The tactile sensation disappears later than the actual pain sensation and, furthermore, it is sometimes rather difficult to get nervous patients to state they do not feel, even if there be complete loss of sensibility.

SPECIAL TECHNIC.

I will give the technic for some of the special operations confined to the different parts of the body. The descriptions are mostly according to Braun's "Die Local-anesthesi," some of them modified in my own practice.

Head. A circumscribed part of the scalp, periosteum and bone can be anesthetized by circular injection under the epicranial aponeurosis with ¼ to ½ per cent. solution. This is especially suitable for cuts and scalp wounds of the head. The median part of the forehead can be anesthetized by injecting a ½ per cent. solution under the fascia of the frontal muscle from the external part of one eyebrow to the corresponding other side. If the line of injection be extended to the tragus on both sides, the whole forehead and anterior part of scalp will be anesthetized. On the other hand, the posterior half of the scalp will be anesthetized by deep injection in the neck in a transversal line from one ear to the other. A thin rubber tube around the head will help to prolong the effect.

Face. It is not as a rule sufficient in the face, as in the scalp, to make a subcutaneous circular injection around the part to be anestnetized. At least it will not under any condition be sufficient where large nerve branches are piercing the operation field. In the face it is, therefore, better to make it a rule to inject under the field. In this way tumors, cancroids, etc., can be extirpated without pain, furuncles be incised, and wounds sutured.

Eyelids can be anesthetized by subcutaneous injection of ½ per cent. solution along the orbital edge, puncturing in the middle and injecting medially and laterally.

The nose is anesthetized by ½ per cent. solution subcutaneously in two lines which from each angle of the mouth are joined together at the base of the nose.

The lips can be anesthetized in their full thickness by a U-formed injection, deep into the tissue. As may be wanted, the injection lines can be put more or less out to the sides and finally to include the whole lip and even parts of the cheek, ½ per cent. solution being sufficient. If the mental nerve comes within the operation field it must be anesthetized separately with 1 per cent. solution.

The tongue is easily anesthetized outside a transverse injection line; ½ per cent. solution for the tip, 1 per cent, for the root.

Neck and *trunk.* Glands and similar tumors can be removed under local anesthesia, when they are well limited, not too large nor too deeply situated. In the large gland masses, surrounding and adherent to the large vessels and sometimes extending clear down to clavicle, general anesthesia is of course unavoidable. But when local anesthesia can be used, it is always to be preferred. The technic is as follows: The gland-mass is lifted up and with a long needle, which is pushed under it, a ½ per cent. solution is injected. The surrounding part and subcutaneous tissue are last infiltrated. In order to avoid injection in the vessels, it is always safest never to inject with still-standing needle. We have to wait from 15 to 20 minuees.

Tumors of the trunk, when they are not too large, not malignant nor too much inflamed, can easily be removed under local anesthesia. It is best suited for benign, well-limited tumors of mamma lipomas, fibroids, retention cysts, etc. Circular injection is usually sufficient, sometimes also injection under the tumor, where nerve branches pierce the fascia at this place.

Resection of ribs. This is an ideal operation for local anesthesia which is here very easy and with good technic always complete. Four punctures only are necessary in the intercostal spaces above and below the ribs, two in front and two back of the part of rib to be resected. The needle is first thrust straight down through skin and intercostal muscle, and about 5 cc. of a 1 per cent. novocain solution injected, most of it deposited at the lower edge of the rib, where the intercostal nerve is running. Next the skin is anesthetized with subcutaneous injection from the same punctures, in a rhomboid figure surrounding the whole field. There will be full analgesia after 15 to 20 minutes.

Herniotomy, for inguinal hernia, is an operation which can be performed, completely painlessly, under local anesthesia. Two punctures only are necessary. The first is about two inches median to anterior superior spine and from here it is injected toward the spine in several layers, deep in the external, internal oblique and transverse muscles. In this way the ileoinguinal and ileohypogastric nerves are blocked. From the same point is further injected downwards on each side of the canal under the aponeurosis of the external oblique 20-30 cc. of 1 per cent. novocain-adrenalin solution. The second puncture is just below the external opening. From this place it is injected upwards under the aponeurosis, on both sides of the spermatic cord. Finally, the skin incision is surrounded by a rhomboid subcutaneous injection. Double hernias are always first both anesthetized and then the operation started.

In *crural hernias,* 20-30 cc. of ½ per cent. solution is injected subcutaneously, around the hernial swelling, most of it deposited upward and inward, where the nerve-supply is richest. After the sack is exposed 5-10 cc. is injected subperitoneal around it. Caution must be used not to inject into the femoral vein on the lateral side of the sack. Strong concentration (1 per cent.) can be used if wanted.

Operations for hemorrhoids, fistula ani and rupture of sphincter ani can all be done under local anesthesia. First a ¼ per cent. solution is injected subcutaneously around the anus. Then the index finger is pushed into rectum above the internal sphincter, and with this as a guide the whole anal mucosa, up to the upper border of internal sphincter, is surrounded by an infiltrated layer of ¼ per cent. solution. Usually four punctures are sufficient. After 15-20 minutes operation in this region can be done without pain. In fistulae it is usually only necessary to infiltrate the tissue surrounding it, not the whole anus except when the sphincter is going to be ruptured.

Operations for hydrocele and varicocele and castrations are well fitted for local anesthesia. The anesthetizing is here so easy and simple that it also ought always to be used for tapping and iodin injection of the sack. The spermatic cord is grasped at the level of tubercule of the pubis and lifted up. We then inject around and into it a few cc. of 1 per cent. novocain solution. The testicle and its enveloping membranes will then in a very short time be without feeling. Scrotum is afterward anesthetized with ¼ per cent. solution subcutaneously along the line of incision, and the regular hydrocele operation or any on the testicle can be performed.

Phimosis and paraphimosis can be cut and sutured by direct subcutaneous infiltration of the foreskin back of the corona. When adrenalin is added to the solution there will be no bleeding.

Perineal ruptures can be completely sutured painlessly, when ¼-½ per cent. solution is injected around the operation field.

Upper extremities. In the arm it is almost impossible to anesthetize separately any one of the larger nerve-trunks. It is also very difficult to produce anesthesia of a large field by circular injection, as so many larger and smaller nerve-branches pierce through the subcutaneous fascia. In extirpating tumors, glands, etc., in this field it is, therefore, necessary to inject around and under the tumor. By incision of phlegmons, abscesses, etc., in this region it is better to use chlorethyl or general anesthesia.

In the forearm, on the other hand, anesthesia is easy. A very effective surface anesthesia of the upper two-thirds can be produced by circular subcutaneous injection of ½-1 per cent. solution, around the arm just above the elbow-joint. With this injection we will block the cutaneous antebrachial, medial, lateral and dorsal nerves, which supply this part. In operations on the flexor side a subcutaneous injection on the anterior side only is sufficient, and in operations on the extensor side injection in the posterior half. In this way it is possible to open abscesses and phlegmons, extirpate tumors and bursa olecrani, and cut out skin flaps for Thiersch's grafts.

The *hand,* with its frequent wounds, paronychiae and foreign bodies, is one of the most important fields for minor surgery. Anesthesia of the whole hand and through its full thickness can be effected by perineural injection of 1 per cent. solution, around the median, radial and ulnar nerves. For anesthesia of part of the hand injection around or in the nerve supplying the part is, as a rule, sufficient. It is, however, a good rule always to anesthetize two nerves rather than one alone, due to the complicated nerve-supply of the hand. And generally it is always better to anesthetize too large a field than too small a one.

A rubber compress around the middle part of the forearm is always advisable, in order to prolong the anesthetic effect and produce bloodlessness.

If the main trunks of the ulnar and median nerves are anesthetized, the whole palm and little finger with its metacarpus will be painless. If the main trunks of the ulnar and radial nerves be anesthetized, the little finger with its metacarpus and most of the dorsum of the hand will be painless. If the main trunks of the median and radial nerves be anesthetized, thumb, index and middle finger with metacarpus will be painless in its whole thickness.

The ulnar nerve can be reached just back of the internal epicondyle of the humerus, where it can be distinctly felt when the arm is extended. This nerve can also be reached in the flexor side of the forearm just above os pisiforme. Here it is found under the tendon of the flexor carpi ulnaris muscle and to the ulnar side of the vessels. The needle is pushed in from the ulnar side of the forearm about 1.5-2 cm. deep, under the tendon, and here 2-3 cc. of the solution is injected.

The median nerve can be reached in the flexor side of the forearm, 5-7 cm. above the wrist. It is here situated subfascial between the tendons of the palmaris longus and flexor carpi radialis muscles. By flexing the wrist the tendons can easily be distinguished. The needle is pushed between these tendons, through the skin and fascia, and right under this 3-5 cc. of the solution is deposited, while the needle-point is moved up and down and from side to side, in order to spread the liquid as much as possible. If we hit the nerve itself the patient will notice a stinging feeling in the three first fingers. Be sure to inject under the fascia, as injection outside this is without effect.

The radial nerve is easily reached by a subcutaneous injection in a transverse line, starting where the radial pulse is felt and reaching into the middle of the extensor side, about 10 cm. above the wrist. The branch of the radial nerve which is supplying the index finger can be anesthetized with a small amount of solution injected over the middle dorsal part of the second metacarpus.

One finger alone can be anesthetized by a special technic. The injection must be done near the four finger nerves, running both on extensor and flexor side of the finger, a little to the side of the tendons. For this purpose the needle is thrust under the skin at the back and root of the finger and well out to the side. A few drops are first injected right under the skin, thereafter ½-1 cc. subcutaneously on one side of the finger. The needle is then pushed deeper in toward the flexor side till bone is felt, where 1-2 cc. is deposited. The same thing is repeated from another puncture on the other side. A thin rubber tube is tied around the base of the finger. This anesthesia is excellent for amputation of the two extreme phalanges, incision of felons, removal of warts, etc.

Lower extremities. If we exclude the toes, local anesthesia is very little used in the lower extremities. Spinal anesthesia has here been a too dangerous competitor. For this reason an exact technic has not been worked out as for the arm and hand.

It is with the thigh as with the arm, that none of the big nerve-branches can easily be reached directly. There is also a very complicated skin innervation which almost exclude circular injection. Subcutaneous injection is, however, very effective for cutting of skin flaps for Thiersch's graft, for instance. For deep incisions in abscesses and phlegmons, general anesthesia will most always be necessary.

Tying of the saphenous vein below the fossa ovalis is one of the operations which can be done comparatively easily. The difficulty is to find the vein. For this purpose it is best to let the patient stand up and then mark its course by methylene blue or a scratch. One to one-half per cent. novocain is then injected around and under the vessel. It is advisable to wait a rather long time before operation is begun.

The thigh is innervated by the saphenous and sciatic nerves. The latter divides above the popliteal space into the tibial and peroneal nerves. In thin persons the two last can be anesthetized in the popliteal space, the tibial in the middle and the peroneal above the external condyle of the femur, at the medial edge of the biceps tendon. Great care must be shown in not entering the big vessels which are in close proximity. The saphenous nerve is easily reached by subcutaneous injection of 1 per cent. solution in the popliteal space. If we in this way succeed in blocking all three nerves, the whole leg and foot will be completely anesthetized.

SUGAR SOLUTION BY PROCTOCLYSIS IN POSTOPERATIVE TREATMENT.[*]

By C. M. Barbee, M. D.
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Success in surgical procedure depends primarily on three fundamental factors. First, the initial disturbance, either of operation or injury, must be within the constitutional limit of endurance; second, the restoration of the parts must comply with the requirements of repair and physiologic function; and third, rest and nutrition must be supplied until repair is complete.

It is to the third feature of surgical work, in postoperative treatment, that my time is largely given in my association with Drs. Rockey. Postoperative treatment properly begins the moment the dressing is applied. The important features of conservation of bodily heat, protection from inspiration of mucus or vomitus during recovery from the anesthetic, careful return from the operating room, and proper position in bed, must all have careful attention.

In the essentials of recovery the maintenance of proper fluidity in the blood is among the most important. John B. Murphy's method of proctoclysis of decinormal salt solution marks a distinct epoch in surgical treatment. Its very general use has resulted in the saving of many lives that would otherwise be lost.

The physical condition of surgical cases frequently precludes the early administration of water by mouth. This is notably true after operations on the stomach and intestinal tract, and also in conditions like fracture of the skull, where the patient may be unconscious for a long period of time and where vomiting may persist as a result of cerebral injury. There are also other conditions where absorption of water by the colon may be advantageously utilized.

At a prior meeting of this society, in a symposium on puerperal eclampsia, the writer presented a paper in which strong emphasis was placed upon the use of sugar water administered per rectum by the drop (Murphy) method, as one of the surest and most rapid means of diluting the blood stream with water, arousing the kidneys to activity, inducing perspiration, etc.; also making mention of its use in other conditions. Jacobson, in 1910, advocated and used sugar solution by proctoclysis in the treatment of eclampsia.

Since the above paper was read we have used sugar solution in a wide range of cases in the practice of Drs. A. E. and Paul Rockey, giving particular attention to its application in postoperative conditions. The results of our experience have been most gratifying. We are in a position to lay emphatic claim to it as a valuable adjunct in treatment where water is demanded and where we are unable to utilize the stomach for this demand.

By careful observation and comparison in the following cases we are assured that postoperative shock is lessened, the circulation quickly equalized, vomiting diminished, thirst allayed, perspiration induced, kidney excretion increased, gas eliminated, ileus less common and, as in most of these cases where the stomach cannot be utilized for several days, a valuable food element is constantly absorbed. These facts tally closely with the results obtained by Jacobson in the treatment of eclampsia, where Cesarian section was done.

Thus far we have met with only a few instances in which the patient did not satisfactorily absorb the solution. The most of these could be charged directly to faulty technic in the use of the "Murphy drip."

As stated in the paper on eclampsia, plain water per rectum is slowly absorbed if not an irritant. Salt solution is more rapidly absorbed but is slightly irritating, and salt is contraindicated in many cases. Sugar water is rapidly absorbed, is practically non-irritant and seems to exercise a general stimulating effect.

The food value of cane sugar is 4 large calories per gram. The endosmotic equivalent of cane sugar is 7.1 (Na Cl 4.3). The strength of the solution used is 15 gm. of cane sugar to 1 liter of water. It is administered by the (Murphy) drop method at the rate of 30 to 40 drops per minute. The rate may be increased or diminished according to the patient's needs for water, or according to the rate of absorption. This rate will use approximately three quarts of the solution in twenty-four hours. The approximate caloric value of the contained sugar is 200 large calories.

It is an open question as to how this cane sugar is utilized by the body. If it be not converted and actually used as food to the tissues, then its presence in the blood stream acts as a tonic to the entire system. Landois states that cane sugar injected under the skin is excreted as such by the kidneys. Repeated urine examinations in many of the cases in this series fail to show its presence in the urine. In two of the cases of gastroenterostomy, for instance, the solution ran continuously for seven days. Nourishment in no other form was given. The patients did not complain of the slightest hunger, kept their weight and no sugar appeared in the urine. These results lead us to believe that the sugar administered by rectum is converted into glucose and utilized by the tissues.

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[*] Read before Portland City and County Medical Society, Portland, Ore.

The sugar water is started as soon as the patient is put into bed from the operating table. If there be much shock, if the patient be deeply anesthetized or if vomiting, he is left flat until the position can be altered to a low Fowler, in which position proctoclysis is most successful. There are many conditions in which the patient must remain flat, but the great majority of cases may and should receive some elevation at the head. Within a short time the pulse increases in volume, the skin becomes warm and moist, followed by free perspiration, there is much less or no thirst, vomiting is lessened, kidney excretion increased and gas escapes. When these results are obtained and maintained, we are past postoperative shock and the fear of ileus. With a few exceptions these results follow the use of sugar solution by proctoclysis.

On page 311, *Journ. Am. Med. Assn.,* Jan. 24, 1914, is an extract from a French journal, stating that 30 per cent. sugar solution is now being employed there intravenously to combat shock, chloroform narcosis, sepis, etc., with much better results than normal saline.

It is in the serious surgical conditions that patients demand postoperative attention other than narcotics and transient stimulants. You will note that the following list comes under this classification. In a list of this length details would be a tax on your time. With a few brief sketches from the histories of some of this series, I will show by tabluation the general character of cases in which we are using sugar solution by proctoclysis. During the period of this observation 1146 general surgical operations were performed in this service. The 150 here reported, being about 13 per cent., illustrates the importance we attach to the method.

Case 34. Fracture of the skull. Mounted patrolman learning to ride a motorcycle lost control and collided head-on with the side of a moving street car. His injuries consisted of a fracture of the base of the skull, comminuted fracture at the lower third of the left femur, fracture of the left patella, together with numerous skin and scalp wounds. This man was unconscious and had to be kept in a restraining sheet for the greater part of three weeks, during which time he received the sugar solution eight or twelve hours daily. At no time did evidence of the sugar appear in the urine. He received other nourishment through a soft rubber catheter passed into the esophagus through the nose. During the fourth week he had made sufficient progress to warrant dealing with the patella and femur. The knee cap was wired and the fragments of the femur adjusted by open operation. He made a splendid recovery, and is, except for some stiffness of the knee, well today.

Case 36. Acute perforating gastric ulcer. Woman, single, age 53, poorly nourished, but in her usual health, long waisted, lower ribs well in toward center line, giving but small area to right upper abdomen. History of stomach trouble for several years past. While at dinner 6 P. M. Jan. 1, was seized with sudden severe pain in upper abdomen. The abdomen was intensely rigid and there was extreme pain in the upper right quadrant. The rigid abdomen, the patient's build and posture, brought the appendix, gallbladder and duodenum within the radius of a very small circle. The past history of stomach trouble, and the sudden severe onset, fixed in my mind a diagnosis of perforation of the duodenum, with the reservation that the trouble might be either with the appendix or the gallbladder. Consultation decided for early operation. This decision was followed by an anodyne for the relief of pain, and the patient was sent to the hospital.

Operation by Dr. Rockey revealed a small perforation at the outer rim of the pyloric ring, together with a pyloric stenosis. The perforation was small but there was escape of intestinal and stomach contents. Pus had begun to form and the peritoneum looked angry. The operation was suture of the ulcer and pyloroplasty. The abdominal viscera were washed with a large quantity of normal saline and the abdomen closed without drainage. The patient left the operating room with considerable shock, was put to bed flat. Sugar solution was started at once. Within half an hour the pulse was strong and full, the skin moist and warm. She was then placed in a low Fowler position. The proctoclysis was continuous for six days, after which she began to take liquids by mouth freely. From this time until the tenth day the proctoclysis was given two or three hours daily, each time winding up its daily use by opening the drip cock, letting it run until the rectum was well filled. This the patient was encouraged to expel as an enema. At the time of operation the temperature was 101° F., pulse 120. Both became normal within 36 hours. Convalescence was very rapid and complete. This case is typical of the results obtained in practically all stomach cases where the sugar solution has been used.

Case 110. Obstructive jaundice due to large stone in common duct. Stone removed through common duct wall, and this opening closed. Gallbladder opened, rubber tube drain.

In this case there was considerable shock. The patient was put to bed flat and the sugar solution started at once. Within one hour the pulse was full, the skin moist and warm, the patient rallied nicely and did well. Urinary excretion was normal up to the third day, when complete suspension of kidney function supervened. The patient died from uremia the following day. The sugar solution was in use continuously, and the patient's response to it was good up to the end of the third day. If this can be considered an adverse report, it is the only one in this series.

Cases 120, 121 and 122 present an interesting parallel. All three were operated on a few days apart during the month. In these the operation was supervaginal hysterectomy for fibroid uterus. It was thought they would do well without proctoclysis, and by giving fluids by mouth. In cases 120 and 121 thirst and vomiting were persistent. On the second day all fluids stopped by mouth and the sugar solution was started. All symptoms disappeared within twelve hours and both cases went on to complete recovery without further trouble. Case 122 did well for thirty-six hours and was getting fluids by mouth, when a persistent vomiting set in with threatened collapse. All fluids by mouth were stopped and the sugar solution started. Relief was prompt and the case went on to complete recovery.

Case 125. This was a most frightful head injury. The frontal and face bones were so badly crushed that they were all afloat. The distortion of the face was horrible. There was escape of brain substance and cerebrospinal fluid. His death was looked for hourly for several weeks. He was injured March 2. On April 15 he had recovered sufficiently to be put in a wheel chair. He gained steadily and May 1 was able to walk about with assistance. On May 6 he did not feel well, on the 7th began to give evidence of meningitis. Death ensued on the 8th. He received his injuries in the wreck of a logging train. Numerous abscesses formed at different times and pieces of wood were extracted from the face. For four weeks he had the sugar solution from twelve to eighteen hours daily. He received other nourishment by nasal feeding.

Case 144. This case had a large bleeding ulcer in the posterior wall of the duodenum. At operation excision was deemed inadvisable on account of adhesions and location. Dr. Rockey did a short loop posterior gastroenterostomy June 3. After operation the ulcer became quiescent until the sixth day. He had had the sugar drip continuously up to this time. On the sixth day he was given water and broth by mouth. Severe hemorrhage from the ulcer started up. He was continued on the sugar solution alone for five days longer. No further bleeding took place, and his recovery has been rapid.

In this case, as well as a number of other severe stomach conditions, such as carcinoma and bleeding ulcers, we have used the sugar solution, in some instances several days preceding operation, the purpose being to supply the tissues with an abundance of water and improve the renal condition. Under such conditions it is of undoubted value.

In addition to this series, we have used the sugar solution in a number of less grave conditions for a few hours and discontinued it, the patients being in a condition to utilize the stomach freely. We have also applied it in a number of medical conditions with gratifying results. The strength of the solution here advocated has proven to be the most readily absorbed. In presenting this paper I feel that I am bringing to your notice a procedure in postoperative work that is of value.

No.	Initial.	Sex.	Age.	Diagnosis.	Operation.	Results.
1.	M. H.	F.	47	Uterine fibrosis	Supravaginal hysterectomy.	R
2.	H. R.	M.	24	Ruptured appendical abscess with general peritonitis.	Appendectomy and drainage.	R
3.	M. H.	F.	58	Malignant papilloma of uterine appendages.	Removal.	O R
4.	E. V. F.	F.	45	Acute pancreatitis with rupture.	Drainage.	D 72 hrs.
5.	E. D.	F.	59	Pyloric stenosis with obstruction of old anterior gastroenterostomy. Vomiting 5 years.	Enteroenterstomy below gastronenterostomy and pyloroplasty.	R
6.	D. C.	F.	63	Carcinoma of pylorus.	Posterior gastroenterostomy.	O R
7.	D. H.	M.	32	Ulcers of pylorus with stricture.	Posterior gastroenterostomy.	R
8.	C. C.	F.	48	Cholecystitis due to stones.	Excision of gallbladder and drainage.	R
9.	P. E.	M.	54	Inoperable carcinoma of stomach.	Ligation of blood supply to growth, and posterior gastroenterostomy.	O R

10.	G. S. L.	M.	47	Benign tumor of pylorus.	Pylorectomy and posterior gastroenterostomy.	R
11.	J. R.	M.	52	Pyloric stricture due to ulcer.	Posterior gastroenterostomy.	R
12.	T. B.	M.	49	Spindle celled sarcoma of arm.	Complete intrascapuloclaviculo-thoracic amputation.	R
13.	S. F.	F.	63	Contracted gallbladder full of stones.	Excision and drainage.	R
14.	E. G.	M.	41	Contracted gallbladder full of stones.	Excision and drainage.	R
15.	D. A.	M.	35	Chronic appendicitis with extensive intestinal adhesion.	Appendectomy and freeing of adhesions.	R
16.	C. R.	F.	32	Gallstones.	Removal of stones and drainage.	R
17.	E. H.	M.	24	Purulent appendicitis.	Appendectomy and drainage.	R
18.	P. M. McA.	M.	87	Enormous strangulated right inguinal hernia.	Herniotomy.	R
19.	T. H.	M.	52	Fracture 6th and 7th dorsal vertebra.	Laminectomy.	R
20.	J. L.	M.	49	Gallstones and extensive carcinoma of liver.	Removal of stones and drainage.	O R
21.	R. H.	M.	53	Umbilical hernia with omental adhesions.	Radical cure.	R
22.	M. O.	M.	55	Pyloric stricture with dilated stomach and stasis.	Posterior gastroenterestomy.	R
23.	A. E. S.	F.	51	Gastric ulcer.	Posterior gastroenterestomy.	R
24.	G. H.	F.	64	Gallstones.	Removal of stones and drainage.	R
25.	H. G.	M.	49	Carcinoma of pancreas.	Anastomosis of gallbladder with duodenum.	O R
26.	S. S.	F.	38	Gallstones and pus.	Removal of stone and drainage.	R
27.	A. G.	M.	57	Carcinoma of pancreas.	Cholecyst-duodenostomy.	
28.	E. W.	F.	55	Contracted gallbladder full of stones.	Excision of gallbladder.	R
29.	J. R. B.	M.	49	Duodenal ulcer.	Posterior gastroenterostomy.	R
30.	R. A. N.	M.	45	Ruptured purulent appendix.	Appendectomy and drainage.	R
31.	A. S. M.	M.	22	Retrocecal appendix, purulent.	Appendectomy and drainage.	R
32.	J. B.	M.	51	Recurrent appendicitis with extensive adhesions.	Appendectomy and free adhesions.	R
33.	F. S. B.	F.	61	Extensive carcinoma of stomach.	Posterior gastroenterostomy.	R
34.	H. E. T.	M.	24	Fracture base of skull, compound comminuted fracture lower one-third left femur, fracture left patella, with skin and scalp wounds.	During second week Lane plate applied to femur and patella wired.	R
35.	W. M. C.	M.	54	Pyloric stricture.	Posterior gastroenterostomy.	R
36.	E. C.	F.	53	Perforating duodenal ulcer with pyloric stricture.	Pyloroplasty.	R
37.	W. E. D.	M.	31	Stricture of pylorus.	Posterior gastroenterostomy.	R
38.	F. A.	M.	42	Duodenal ulcer.	Posterior gastroenterostomy.	R
39.	H. R. L.	M.	27	Acute purulent appendicitis.	Appendectomy and drainage.	R
40.	M. E. S.	F.	54	Gallstones and pyloric stricture.	Removal of stones and drainage; also posterior gastroenterestomy.	R
41.	T. B. D.	M.	76	Extensive carcinoma of stomach, with obliteration of cavity.	Catheter sutured into upper part of jejunum; lived 4 months.	O R
42.	M. L.	F.	24	Pyloric stenosis with dilated stomach and ulcers.	Posterior gastroenterostomy, excision of ulcer and closure.	R
43.	E. C.	M.	34	Perforated duodenal ulcer.	Posterior gastroenterostomy.	R
44.	J. E. I.	F.	56	Partial occlusion of ascending colon by adhesions of omentum and sharp kink in same.	Freeing adhesions and suspension of colon by direct suture.	R
45.	J. B.	M.	37	Duodenal ulcer.	Posterior gastroenterostomy.	R
46.	C. M.	F.	28	Gastroptosis, stasis with diarrhea.	Suspension by direct suture of stomach to anterior abdominal wall.	R
47.	E. W.	F.	82	Cancer involving posterior wall of stomach, pylorus.	Gastroenterostomy.	O R
48.	S. K.	M.	24	Ruptured gangrenous appendix.	Appendectomy and drainage.	R
49.	J. I.	M.	27	Dilated stomach with pyloric stricture.	Posterior gastroenterostomy.	R
50.	E. L.	F.	29	Adhesive bands near pylorus constricting stomach.	Posterior gastroenterostomy.	R

51.	S. J. S.	F.	59	Cancer of gallbladder and adjacent liver; gallbladder full of stones.	Excision of gallbladder and involved portion of liver.	R
52.	I. M.	F.	37	Twisted gallbladder full of stones.	Excision and drainage.	R
53.	T. M.	M.	41	Cancer of esophagus.	Catheter anchored in stomach by Kadder method.	R
54.	L. V.	M.	26	Depressed fracture of skull, tempoparietal region; also fracture of base.	Elevation, unconscious 6 days.	R
55.	J. P. L.	M.	49	Cancer of stomach.	Removal of two-thirds by Billroth method.	R
56.	W. H. F.	M.	43	Persistent vomiting with sliding hernia of sigmoid.	Herniotomy.	R
57.	M. K.	F.	34	Right retrocolic abscess following abortion.	Drainage.	R
58.	J. D. M.	F.	36	Purulent appendicitis.	Appendectomy and drainage.	R
59.	M. MacA.	F.	83	Ruptured gallbladder; full of stones and pus.	Evacuation and drainage.	R
60.	R. B.	F.	32	Purulent appendicitis.	Appendectomy and drainage.	R
61.	J. W. B.	M.	47	Pyloric stenosis, with dilatation and ulcers.	Posterior gastroenterostomy.	R
62.	M. M.	M.	28	Purulent appendicitis.	Appendectomy with drainage.	R
63.	C. G. W.	F.	34	Chronic appendicitis and pelvic adhesions.	Freeing of pelvic adhesions and removal of appendix, with neoplasm in its end, sections of which revealed primary carcinoma.	R
64.	L. S.	F.	46	Inoperable carcinoma of pelvic organs.	Exploratory laparotomy and closure of incisional hernia.	R
65.	A. J.	F.	28	Fibroid uterus with pyosalpingitis.	Supravaginal hysterectomy and salpingectomy.	R
66.	B. F. D.	F.	47	Uteri submucous fibroids with shaggy endometrium.	Supravaginal hysterectomy with appendages.	R
67.	W. S.	M.	41	Large left inguinoscrotal incarcerated hernia.	Bassini.	R
68.	M. S.	F.	71	Obstructive jaundice from cancer of pancreas, gallstones.	Removal of stones, anastomosis of gallbladder to loop of jejunum through mesentery of colon, mesentery tacked gallbladder; enterostomy between jejunal loops.	R
69.	C. S.	M.	26	Pyloric ulcer.	Excision of ulcer, pyloroplasty.	R
70.	A. J.	M.	49	Purulent appendicitis.	Appendectomy and drainage.	R
71.	F. B.	M.	32	Compound comminuted depressed fracture of frontal bone; laceration frontal lobes, and basal fracture. a. f.	Dura sutured, fragments replaced, wounds closed.	R
72.	M. B.	M.	34	Duodenal ulcer.	Posterior gastroenterostomy.	R
73.	T. P.	M.	27	Perforated appendix.	Appendectomy and drainage.	R
74.	E. L. C.	M.	24	Fracture base of skull.	Suturing scalp wound.	R
75.	W. T.	F.	37	Gallstones with pus.	Removal of stones and drainage.	R
76.	H. J. C.	M.	29	Pyloric stenosis; persistent vomiting.	Posterior gastroenterostomy.	R
77.	M. C.	M.	23	Purulent appendicitis.	Appendectomy and drainage.	R
78.	D. D.	F.	17	Gangrenous appendicitis.	Appendectomy and drainage.	R
79.	L. P.	M	40	Strangulated right scrotal hernia, one week prior had sustained compound fracture both bones of leg, and had valvular heart lesions. Epileptic.	Herniotomy under ⅓ per cent. novocain, and reduction of fracture.	R
80.	W. H. D.	M.	42	Compound depressed fracture right frontal, compounding frontal and ethmoidal cells.	Trephining, elevation, replacing, suturing wounds.	R
81.	J. L. M.	M.	35	Abscess upper pole left kidney.	Drainage.	R
82.	S. I.	M.	37	Pyloric stenosis.	Posterior gastroenterostomy.	R
83.	R. E. W.	M.	46	Gangrenous appendicitis.	Appendectomy and drainage.	R
84.	A. W. R.	F.	31	Ruptured ectopic.	Removal of tube and drainage.	R
85.	C. M.	F.	51	Duodenal ulcer.	Posterior gastroenterostomy.	R
86.	T. R.	M.	26	Gangrenous appendicitis.	Appendectomy and drainage.	R
87.	J. C.	M.	25	Duodenal ulcer.	Posterior gastroenterostomy.	R
88.	J. M.	F.	54	Gallbladder region occupied by mass, stomach involved.	Posterior gastroenterostomy with drainage.	D
89.	S. A.	M.	24	Ruptured gangrenous appendix.	Appendectomy and drainage.	R
90.	J. F.	F.	54	Obstructive jaundice due to contracted gallbladder full of stones.	Excision and drainage.	R
91.	M. W.	F.	12	Spindle celled sarcoma of shoulder and upper part of humerus.	Intraclaviculo-scapulo-thoracic amputation.	R
92.	H. S.	F.	31	Ruptured ectopic.	Salpingectomy.	R

93.	J. A. T.	M.	47	Obstructive jaundice due to stone in common duct at ampulla of Vater.	Removal through transduodenal opening.	R
94.	K. O. K.	M.	35	Large bleeding ulcer lesser curvature of stomach.	Ulcer excised, died third day.	D
95.	H. C. C.	M.	46	Large psoas abscess, with mixed infection following different planes of pelvis and back, open on both sides.	Drainage.	R
96.	P. W.	M.	20	Purulent appendicitis with rupture.	Appendectomy with drainage.	R
97.	I. P.	F.	56	Inoperable carcinoma of stomach.	Posterior gastroenterostomy.	O R
98.	H. H.	M.	61	Inoperable carcinoma of stomach.	Ligation of blood supply and posterior gastroenterostomy.	O R
99.	M. E. F.	F.	59	Contracted adherent gallbladder, dilated common duct containing many soft stones.	Excision and drainage.	R
100.	C. S.	M.	47	Strangulated right inguino-scrotal hernia.	Resection 36 inches of ileum, end to end an astomosis, closure of hernia.	R
101.	S. K.	M.	38	Malignacy of liver.	Exploratory laparotomy.	O R
102.	O. J.	F.	57	Inoperable carcinoma of abdominal contents.	Exploratory laparotomy.	O R
103.	L. H. B.	M.	47	Benign stricture of pylorus.	Posterior gastroenterostomy.	R
104.	L. A.	F.	17	Rudimentary right leg; no fibula, foot up and in, six inches short, tibia not articulating with femur but behind it.	End of tibia pointed, cup cut in end of femur, cartilages cut away, one nail and closure, ankle treated by Phelps method.	R
105.	H. B.	F.	56	Malignant papilloma of left ovary.	Removal.	R
106.	L. C. F.	M.	39	Recurrent right inguinal hernia.	Bassini closure with appendectomy through same wound.	R
107.	S. K.	M.	30	Acute cholecystitis and cholangeitis	Drain per gallbladder.	R
108.	W. A. G.	M.	46	Depressed fracture of vertex, left frontoparieto temporal, five days' standing, complete aphasia.	Trephining and elevation, closure of dura.	R
109.	E. V. L.	F.	47	Obstructive jaundice due to large number of small gall-stones.	Removal of stones and drainage.	R
110.	N. J.	F.	73	Obstructive jaundice due to large stone in common duct.	Removal of stone through c. d. wall, gallbladder opened, tube drain; sugar solution in use and patient did well up to third day when complete suspension of kidney function supervened, patient died on fourth day; this is the only completely adverse report in this series.	D
111.	G. B.	F.	33	Ovarian cyst with twisted pedicle; also chronic appendicitis.	Removal of cyst and appendectomy.	R
112.	Dr. B.	M.	75	Obstructive jaundice; large stone in ampula of Vater.	Removal of stone through transduodenal incision.	R
113.	E. P.	F.	43	Diffuse carcinoma of stomach.	Retrocolic anterior gastroenterostomy and enteroenterostomy.	R
114.	L. G.	M.	47	Pyloric ulcer.	Pylorectomy.	R
115.	J. Z.	M.	44	Bullet in spine at fifth cervical for 18 days, complete paralysis below.	Laminectomy, removal of bullet; died 1½ days, respiratory paralysis.	D
116.	J. C.	F.	53	Fibroid uterus.	Complete hysterectomy.	R
117.	T. J. H.	F.	49	Advanced carcinoma of pylorus, infiltrating anterior abdominal wall occlusion of duodenum.	Anterior gastroenterostomy, good recovery.	R
118.	C. G. B.	F.	24	Right renal abscess.	Nephrectomy.	R
119.	W. B.	M.	49	Gallstones.	Removal of stones and drainage.	R
120.	W. M. H.	F.	34	Fibroid uterus.	Supravaginal hysterectomy.	R
121.	G. L. B.	F	45	Fibroid uterus.	Supravaginal hysterectomy.	R
122.	G. H. G.	F.	49	Fibroid uterus.	Supravaginal hysterectomy.	R
123.	C. D. M.	M.	37	Perforated ducdenal ulcer.	Posterior gastroenterostomy, pyloroplasty.	R
124.	R. R. McR.	F.	30	Ruptured pyosalpynx with adhesions.	Salpingectomy and drainage.	R
125.	O. M.	M.	24	Bad fracture of upper face and skull with brain laceration.	Replacing fragments and suture of wounds.	R

126.	M. McA.	F.	43	Obstructive jaundice due to large number of soft stones in common duct.	Removal of stones and drainage.	R
127.	B. J. M.	F.	45	Degenerating fibroid of body of uterus.	Supravaginal hysterectomy.	R
128.	R. F.	F.	26	Ruptured pus appendix.	Appendectomy and drainage.	R
129.	F. L. L.	F.	54	Large incisional right rectus hernia.	Freeing adhesions about gall-bladder, etc., and closing hernia.	R
130.	J. D. McC.	F.	28	Eclampsia, complicating pregnancy seventh month.	Cesarean section.	R
131.	E. Z.	F.	46	Uterine fibroid.	Supravaginal hysterectomy.	R
132.	O. A. M.	F.	38	Chronic appendicitis and procedentia.	Appendectomy and Baldy-Webster suspension.	R
133.	C. M.	M.	39	Compound comminuted fracture vertex with brain laceration; also fracture left femur and lower jaw.	Elevation, replacing skull fracture, suture wounds, replacing jaw, Lane plating of femur.	R
134.	L. R.	F.	37	Chronic appendicitis, stasis due to adhesions.	Appendectomy, freeing jejunal adhesions, removal ovarian cyst.	R
135.	R. D. C.	M.	34	Duodenal ulcer.	Posterior gastroenterostomy.	R
136.	F. L. D.	F.	31	Pyonephritis, right.	Nephrectomy.	R
137.	J. R.	F.	18	Ruptured gangrenous appendix with general peritonitis.	Appendectomy and drainage.	R
138.	M. A.	F.	42	Carcinoma body of uterus.	Total hysterectomy.	R
139.	M. O.	F.	26	Exsanguination due to incomplete abortion.	Removal of detritus without anesthetic.	R
140.	L. D. H.	F.	48	Uterine papilloma with carcinomatous change.	Hysterectomy.	R
141.	E. S.	F.	47	Billiary fistula following excision of gall bladder. Previous attempts at closure. Patient referred from another clinic.	Resection first portion ileum, end to side anastomosis, free end attached to liver and surrounding tissue at opening of bile duct to form new duct (Lamphear).	D 30 hr
142.	H. E. W.	M.	27	Retrocecal appendical abscess.	Removal of appendix and drainage.	R
143.	J. F. L. G.	M.	68	Linear fracture of vertex and fracture base of skull.	All indications for interference absent; died on 8th day. Sugar solution practically continuous.	D
144.	A. P. A.	M.	64	Large umbilicated ulcer of pylorus.	Excision and posterior gastroenterostomy.	R
145.	A. K.	F.	51	Gallstones, cholecystitis, and nephritis.	Removal of stones and drainage under local anesthetic.	R
146.	E. J. P.	F.	30	Degenerating fibroid uterus.	Supervaginal hysterectomy.	R
147.	A. B.	M.	65	Carcinoma involving two-thirds of stomach.	Anterior gastroenterostomy.	O R
148.	I. M.	M.	46	Carcinoma of stomach.	Anterior gastroenterostomy.	R
149.	B. F. W.	M.	58	Inoperable carcinoma of stomach.	Anterior gastroenterostomy, and enteroenterostomy	D 6th day
150.	S. L. J.	F.	64	Large incisional hernia with visceral ptosis.	Closure of hernia after freeing intestines and suspension stomach by direct suture of anterior wall to abdomen.	D

JACKSONIAN EPILEPSY WITH REFERENCE TO ITS SURGICAL TREATMENT.*

By A. T. R. Cunningham, M. D., F. A. C. S.

SPOKANE, WASH.

The term epilepsy, literally meaning a "falling on" and also described as an attack or seizure, has been used since the time of the ancients to describe a condition concerning which we are but little if any better informed today than in the olden times. The histogenesis of the disease is still unknown and the ancient idea of being possessed of the devil or seven devils, as the case might be, conveys just as clear an idea as any modern definition of the disease.

Some fourteen years ago, in a city in this state, seventy-five medical men from various parts of the country were gathered together to take the state board examination. Just before the examination began one of these men had an epileptic attack. Beyond loosening his collar, stretching him out uncomfortably on the floor, and watching the course of the attack with scientific zeal, nothing further was done. This simply goes to show how little true advance has been made in the treatment of epilepsy, even when staged before an assemblage of medical men.

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So far as I am able to learn, there is no satisfactory treatment for true epilepsy, the accepted mode of treatment today being that of a greater or less inhibition of the cortical centers by the administration of bromides or other depressants. While there is no surgical relief for true epilepsy, still a few cases have been reported where the condition has been improved, occasionally cured, and many times made worse by the operation of trephining. It is interesting to note, however, that epilepsy has occasionally been cured by other operations, such as that for adherent prepuce, adenoids or the removal of other peripheral irritations. This suggests an explanation of the disease, namely that it is due to a hyperexcitation of the cerebral cortex, whether of peripheral or central origin.

There is a certain class of cases of epilepsy that seems to be due to some localized central lesion. That this irritation is localized is suggested by the fact that the attack is always, at least in its earliest stages, ushered in by so-called aurae. This aura is fairly constant in the individual but may be either motor or sensory. Through this aura can be determined the point or area of the motor cortex, where it is reasonable to suppose the irritation originates. For example, a great many cases are ushered in by a twitching or spasmodic contraction of the fingers, gradually extending to the arm and perhaps continuing to the whole side, and eventually involving the whole body. In such a case we would expect to find the lesion localized at the arm-center in the precentral convolution of the opposite side of the cerebrum.

It is to this type of epilepsy that I wish to call your attention, namely the focal type or Jacksonian, as distinguished from the general or idiopathic epilepsy, where, again, the pathology of the disease is not very well understood. Suffice it to say, that many cases seem to originate in a well defined lesion involving the cerebral cortex, such as depressed fracture or spicule of bone, exostosis, tumors and cysts, blood clots, adhesions, localized pachymeningitis, etc. Syphilis may also be named as a cause, and a search for this disease should always be made.

As to the course and symptomatology of focal epilepsy the cases differ widely. In many cases of traumatic epilepsy the disease does not appear until a long time after the injury. Then it may begin as slight seizures of a focal type, occurring at intervals of weeks, sometimes months and gradually increasing in frequency and severity. In one case which I wish to report the epileptic attack did not begin until two years after the skull injury which resulted in a depressed fracture, and at first his attack occurred only four or five times a year but gradually became so frequent that just prior to his operation he was having as many as twenty seizures a day and so severe as to completely lose consciousness.

Heretofore the rule has been laid down that, if our other methods of treatment have been exhausted, surgery might be employed in these cases. The works of Krause, Horsley, Cushing and others have emphasized the fact, however, that the best and most lasting results are obtained in cases of comparatively early intervention. This does not mean indiscriminate and hasty surgery, for every case of epilepsy should be carefully studied and treated on its own merits. If improving under medical treatment, of course there is no call for surgical. On the other hand, if surgical treatment be determined upon, the sooner it is accomplished the less likelihood is there of permanent cell changes.

The causes of epilepsy being so varied and in many cases so obscure, it is but natural that a variety of operations should be devised, depending upon the different theories of the various operators. Thus Kocher believes that the attack may be due in many cases to sudden alterations of brain pressure and he advocates the formation of a permanent cranial defect. Jonesco believes that these changes of pressure are due to vasomotor disturbances and may be either hyperemic or anemic in type. He, therefore, resects the cervical sympathetic together with its superior ganglion, first on one side then on the other. The value of these methods, however, has not been distinctly proven and the resection of the cervical sympathetic in part has not been very widely copied.

Krause is a very warm advocate of cortical excisions, an operation which he has done a great many times and with a fair degree of success. In those cases in which no lesion is apparent he carefully localizes his primary spasming center by means of electrical stimulation, employing a very weak faradic current. The galvanic current, which is so generally used by physiologists, he condemns as being more dangerous, as in one or two cases where he has employed continuous current upon the brain he has succeeded in producing most violent epileptic seizures. One case was so severe that death nearly resulted on the operating table, restoration finally being accomplished by massaging the heart. He warns very strongly against the careless use of electric stimulation for the purpose of localization. While of distinct value if carefully and intelligently carried out, still its danger should be kept clearly in mind. He employs the very faintest perceptible current and never goes over the same area of cortex twice. He claims that it is the only reliable method known for definitely localizing the primary spasming center.

Having definitely localized this center, he excises the cerebral cortex including it. This results in temporary paralysis of the parts controlled by this center but this paralysis gradually disappears. The resulting scars from cortical incisions, in the absence of any infection, apparently do no harm and according to Krause do not necessarily cause recurrence of epileptic attacks. Horsely has also advocated the removal by extirpation of these over-irritable centers and according to these two men the operation seems to be a rational one and in many cases successful. Cushing, however, is not so enthusiastic and he states the operation has not proven to be a method of accepted value and that the cases suitable for its employment are few. He has extirpated cortical areas, in about fifteen cases, from the precentral or from the postcentral gyrus, where there has been an inaugural sensory aura, some of them having unexpectedly resulted in cures. One or two that promises to be especially favorable, owing to the circumscribed nature of the initial movement, (thumb and corner of the mouth) were not benefited.

In many of these cases of epilepsy, where there is a macroscopic lesion such as a tumor or depressed fracture, hemorrhage or thickening of the dura with adhesions, the surgical procedure is easy. One should bear in mind, however, the possibility of permanent changes in the central cells and should be guarded in giving a prognosis of cure by surgery in any case, no matter how favorable that case might appear. That many cases are cured is an established fact and warrants us in adopting surgical measures to this type of cases.

As illustrative of the fact that cures may be accomplished in some cases that seem to be clinically hopeless, I wish to report the following:

The case is that of the young man, to whom reference was previously made, who at the age of fourteen had a skull injury, resulting in a depressed fracture extending across the left temporal and parietal bones, about three inches in length. His epileptic attacks did not occur with any degree of frequency until seven or eight years after the injury. He was under the care of Dr. Roark, who had recognized the focal character of his attacks, although they had become so frequent and so violent that finally he was going from one general attack into another, having developed almost a status epilepticus. Upon consultation it was decided to operate, although so long a period had elapsed since his injury that the case did not seem a favorable one for securing permanent results.

March 6, 1911, with the assistance of Drs. Roark and Hoag, I trephined and removed the depressed portion of skull. The dura underneath was very thick and covered with adhesions. Upon opening and raising this section of dura we discovered a subdural cyst about the size of a hen's egg. This cyst was removed and the scalp reunited, leaving a cranial defect. The man regained consciousness the next morning after the operation and was entirely free from attacks. The wound healed nicely and, with the exception of a subsequent typhoid, there were no complications.

A second case, referred by Dr. McDowell, is that of a young man, 21 years of age, who had an injury over the right temporal region several years ago. For the last four years he has been having epileptic seizures at intervals of about two or three months. His attacks were preceded by a twitching of the thumb and fingers of the left hand, gradually extending over the entire body.

He was operated on January 24, of this year, an osteplastic flap being made on the right temporal region, including the old scar. The inner plate of the skull was perfectly smooth and the dura appeared perfectly normal. The dura was opened widely but nothing pathologic could be discovered. Although we opened topographically over the rolandic area, still it was impossible to distinguish this fissure for a certainty without removing the pia mater which, of course, is impracticable. Possibly this would have been a good case to have localized the spasming center by the use of the faradic stimulation, but this we were not prepared to do. The dura was sutured, the osteoplastic flap replaced and the wound dressed dry. The patient made a normal recovery from the operation, but on the nineteenth day had one slight attack.

We cannot hope for much of a result in this case, although Krause reports similar cases where attacks have recurred a few times following the operation but have eventually cleared up. The explanation of these cases is not clear and I report this last one merely to show that one must be prepared for negative findings a great many times.

THE USE OF COLORED LENSES TO CUT DOWN HEAT RADIATION AND NEUTRALIZE ULTRA-VIOLET AND INFRA-RED LIGHT RAYS.*

By F. F. Casseday, Ph. D., M. D.,
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The glare of strong light is injurious to the eye, equally whether direct or reflected from a white surface. In fact, reflected light is usually more injurious than direct light of the same intensity. When to the glare of light there is added intense heat radiation in mechanical industries, like glass blowing, smelting, steel making, etc., the injurious effects are aggravated.

Reflected sunlight from the surface of water is extremely irritating to the eye and will cause vertigo and double vision. These effects come on usually after several hours of sleep or rest, wearing away gradually after twenty-four to forty-eight hours. Direct sunlight is extremely injurious to the eye. Sunlight reflected from white cliffs, white roads or pavements affects the eye in a similar manner. Strong light has produced temporary and in some cases permanent blindness.

With the great improvements of late years in modern systems of artificial illumination, notably in electric and gas lamps for stores, factories and homes, the question of the integrity of human vision in the constant presence of this increasing glare of light becomes a pressing problem.

There was a time when the good old kerosene lamp looked pretty good to us but it has gone to the scrap pile, except where electricity and gas are unavailable, along with the blazing torch and the tallow dip. We demand more and better light all the time. Will the human eye stand this increasing glare of light?

The carbon electric lamp has given way to the improved Mazda and the volume of light is doubled and quadrupled, its intensity being correspondingly increased. A new arc light is on the market, whose volume and intensity are many times increased over the old arc. The gas people are racing to keep up with the electric manufacturers and the mantle arcs are flooding stores and homes with a glare of light.

Modern factories are glazing the walls to the roof with prismatic glass to secure every ray of sunlight possible in the interior and painting the interior walls white to still further increase the volume and intensity of the light.

It makes the factory more cheerful and increases the efficiency of the workers, but it also carries the increased hazard of possible injury to the workers' eyes. The white, glazed wall-surface reflects almost all of the light reaching it and absorbs very little. Neutral tints, shading from orange to light green, absorb more light and cut down the glare very materially, but the volume is decreased. It is probable that this factory problem will be met by colored window lights which will eliminate the injurious effects of the light-rays before they reach the interior of the building.

Glass making, on account of the intense glare of the molten glass, has always been extremely injurious to the eyes of glass blowers. Since March, 1909, Sir William Crookes has been experimenting in connection with the Glass Makers' Cataract Committee, of the Royal Society of England, on the effect of adding various metallic oxides to the constituents of glass in order to cut off the invisible rays at the upper and lower ends of the spectrum, and in this manner to prepare a glass which will cut off these rays from the highly heated molten glass, without obscuring too much light or materially affecting the colors of objects when seen through spectacles made of such glass.

Single metals were first tried and the glass tested for percentage of heat cut off, for upper limit of transmission of ultra-violet rays, for opacity, to estimate percentage of luminous rays transmitted, and color registered. The following metals were selected as worthy of further experimentation singly and in various combinations: cerium, chromium, cobalt, copper, iron, lead, manganese, neodymium, nickel, presodynium, and uranium.

Sir William succeeded in preparing glasses which cut out more than 90 per cent. of heat radiation, opaque to ultra-violet rays, and sufficiently free from color to be used as spectacles. He has not been able to combine in one specimen of glass these three desiderata in the highest degree. The ideal glass, which will transmit all the colors of the spectrum, cutting out the invisible infra-red and ultra-violet rays, and stopping heat radiation, is yet to be discovered.

In regard to transparency a tinted glass is no disadvantage, as strong light of any kind is injurious to the eye and a tinted glass will afford protection. Glasses have been prepared in pale green, yellow, and neutral tints, and these have the advantage of being restful to the eyes in glare of the sun or strong light of any kind, and in addition have the advantage of cutting practically all of the ultra-violet rays and a considerable amount of heat radiation.

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*Read before the Portland Ophthalmological and Oto-Laryngological Society, June 15, 1914, Portland, Ore.

The pale green tint and yellow are probably the most restful to the eyes but most persons would object to these colors from cosmetic reasons. The light orange tint is scarcely noticeable and the color is very restful to the eye. The color is not material, provided the harmful ultra-violet and infra-red rays are cut out and heat radiation is stopped.

The experiments of Sir William Crookes were primarily undertaken to help preserve the integrity of the eyesight of glass workers but, with the increase in volume and intensity of all systems of artificial illumination, and the injury to the eye which this will entail, it is fortunate that the investigation and experiments will include the application of these lenses to all conditions brought about or resulting from the injurious effects of light rays or heat radiation and thereby preserve human vision.

My experience with colored lenses is limited. In several cases where there was a history of sensitiveness to light, symptoms of eyestrain and several changes of white lenses within a few months for either presbyopic or hyperopic errors of refraction without relief, I found orange tinted lenses to correct the errors gave immediate and permanent relief. The orange tinted lenses which I have used are made, I believe, in Germany. Just how much heat radiation they cut out or how much of the invisible rays they intercept and stop I am unable to say, as I do not own a radiometer, have not access to a spectrum apparatus or a Chapman Jones opacity meter. It is also fair to state that I gave some internal treatment for the eyestrain which contributed toward the relief of the patients.

In one case of partial day blindness the orange tinted lenses brought into view millions of unset diamonds but they have now disappeared and vision in strong light is slightly improved. Vision after sundown in this case is fine. In all the cases of eyestrain with sensitiveness to light the orange tinted lenses were very comfortable and all the patients express themselves as getting great comfort from the glasses. Some have worn these lenses for more than two years.

In 1910 Dr. E. Ward Tillotson, industrial chemist of the University of Kansas, was making splendid progress in investigating the relation between the physical properties of glass and its chemical constituents. As these investigations will accrue to the benefit of the donor of the scholarship there may not be reports on Dr. Tillotson's work of a practical character. In any event his investigations will shed some light on the use of colored glass for lenses.

The finest glass in the world is made at Jena for optical and scientific purposes. Industrial chemists, like Abbe and Schott, have made a thorough investigation of glass making and reduced the manufacture to an exact science. When they begun their work there were only five glass-forming oxides whose properties were well known, namely silica, potash, soda, lead oxide and lime. They have added twenty-eight substances—oxides—to this list and studied their optical effects. They have, as the result of their labors, discovered the means of producing some 2000 new glasses, composed of the finest optical properties, and thereby have forwarded in a material and practical way the progress of physics, biology and astronomy. And therein lies the reason why "Jena glass" is the last word in scientific glass making.

As a side light on this matter of stopping heat radiation, some experiments made by British army men in India are timely. Various experiments had been made in placing variously colored cloth lining in the helmets. It was found that an orange or yellowish colored cloth afforded the most comfort, and cut down the heat radiation more effectively than any other color. This investigation may result in cutting down the mortality from sunstroke and heat exhaustion.

One other sidelight and I am done. Some years ago several live stock breeders in the South decided to breed a well known white hog. The experiment failed and the U. S. Agricultural Department was appealed to for advice. It was found that the white hog could not stand the heat and strong light of the South. The black hog thrived and grew fat under the Southern sun. In the light of our knowledge of the invisible rays of light it is probable that the black coat of the black hog arrested the heat radiation and cut down the infra-red and ultra-violet rays to the point of life and safety.

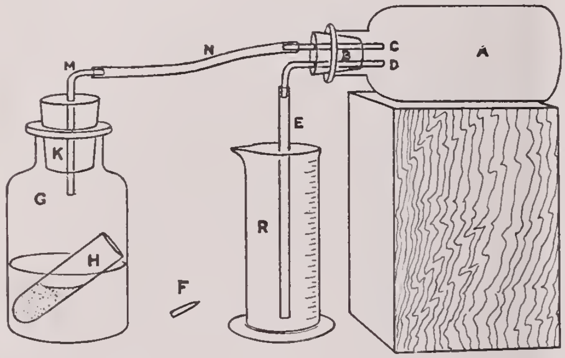
CLINICAL REPORTS.

AN IMPROVED UREOMETER FOR CLINICAL USE.

By John M. Connolly, Ph. D., M. D., LL. D.
PORTLAND, ORE.
Professor of Chemical Physiology, Medical Department, University of Oregon.

Squibb's apparatus is, without doubt, the most satisfactory for the clinical determination of urea,* but its cost is an item worthy of consideration when a large laboratory is to be equipped for the use of students. By combining a part of the instrument known as Gerrard's or Dupré's with a part of the Squibb's, an apparatus is obtained which can be made by anyone at slight expense.

The diagram will render clear the method of operating the improved instrument.



The square bottle, A, is filled with water and the two-holed rubber cork, B, inserted. Through this cork pass the straight glass tube, C, and the right-angled glass tube, D, over which is slipped the rubber tubing, E. A finger is placed over the free end of C, the cork pressed firmly into the neck of the bottle, and the glass plug, F, inserted into the free end of the rubber tube, E. The bottle, A, is then laid on its side upon any convenient support.

The sodium hypobromite solution (or other reagent) is then placed in the bottle, G, and 2 cc. of urine measured from any convenient pipette, graduate or burette into the glass shell, H, which is then introduced into the bottle, G, in such a manner that the urine does not yet come in contact with the reagent.

To facilitate introduction and removal of the glass shell, the bottle, G, should have a rather wide mouth. The glass shell may be made by cutting off the end of test-tube, or a so-called homeopathic vial may be used. A one-holed rubber stopper, K, fitted with a short piece of glass tubing, M, to which is attached a piece of rubber tubing, N, is then firmly inserted into bottle G and connection made between N and C. All joints must be air-tight.

The glass plug, F, is then removed, the graduate, R, put in place, and bottle G inclined so as to mix the urine with the reagent. After the effervescence has ceased the graduate is removed, the reading made therefrom, and the percentage ascertained from the following table.

Table.

No. cc.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Per cent...........	0.50	0.63	0.76	0.88	1.01	1.13	1.26	1.39	1.51	1.64	1.77	1.89	2.02	2.14	2.27	2.40	2.52	2.65

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*See Ogden, Clinical Examination of Urine, page 50.

REPORT OF A CASE OF BERI-BERI.*

By Edmund Myers, M. D.
PORTLAND, ORE.

I am bringing this case to your attention because of the rarity with which it is seen in this country. The patient was referred to me by Dr. Whiteside from the Multnomah County Hospital, after having been seen by him in consultation with several members of the staff.

R. R., Hindoostan, aged 26, formerly a newspaper editor and therefore far above the ordinary Hindoo in intelligence. For the following history taken from the records of the hospital, I am indebted to the senior interne, Dr. Jones.

Admitted June 6, 1913.

Present illness. First noticed a pain over the third dorsal vertebra about one month ago. This was localized to a space about three inches in diameter. About six days later patient states pain went down the right arm and then that extremity became numb. Pain constant but worse at night and kept him awake. Could hold neither pencil nor knife, owing to the pain. Fifteen days later the left arm became similarly affected. At present the pains are through his chest as well as in both upper extremities. The little and ring fingers of each hand seem to be the most affected. Localized pain over each electron process. Feels as though insects were crawling over them. The past and family histories have no connection with the present condition.

Physical examination negative, except that the reflexes of the lower extremities are slightly increased and there is anesthesia of both forearms from elbow to end of fingers. The latter are crooked and he is unable to straighten them. Patient has eaten lots of rice and at times would eat nothing else. He was discharged June 15 with no improvement in his condition.

The patient was first seen by me July 8, presenting marked symptoms of polyneuritis and muscular atrophy which Osler has described as belonging to the second form of his classification of the disease.

Treatment. Local high-frequency along the course of the nerves of both arms. In a few days he complained of severe intercostal pain, for which he was given autocondensation and afforded much relief. This treatment was continued three weeks. By this time the neuritis of the lower extremities had become so marked that the patient had the appearance of a drunken man as he staggered into my office. I discontinued treatment for the arms and applied positive galvanism and faradism to his legs. After he had partially gained control of his legs I devoted my attention to the muscular atrophy of all the extremities, giving combined fast faradic and sinusoidal currents until Dec. 20, when he practically recovered, and left the city to pursue his study of journalism in California.

In a letter, dated May 15, 1914, he stated that he had continued my method of treatment for two months and that at the end of that time he was absolutely free from pain and felt better in every way, although his hands were still a little weak.

835-7 Morgan Building.

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*Read before the Portland City Medical Society, Portland, Ore., Dec. 17, 1913.

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon, Washington, Idaho and Utah.
Devoted to the Interests of the Medical Profession of the Pacific Northwest.
Editorial Office, 719-22 Cobb Building, Seattle, Wash.
SEPTEMBER, 1914.

EDITORIAL

ASSOCIATION MEETINGS.

OREGON STATE MEDICAL ASSOCIATION WILL MEET AT PORTLAND, SEPT. 10-11.

WASHINGTON STATE MEDICAL ASSOCIATION WILL MEET AT NORTH YAKIMA, SEPT. 21-23.

UTAH STATE MEDICAL ASSOCIATION WILL MEET AT SALT LAKE CITY, SEPT. 29-30.

IDAHO STATE MEDICAL ASSOCIATION WILL MEET AT BOISE, OCT. 8-9.

THIS MONTH'S MEETING AT PORTLAND.

The annual meeting of the Oregon Association, which will be held at Portland on the 10th and 11th of this month, should attract all the members of Oregon and others who are able to attend. A preliminary program, which is herewith presented, gives an indication of the character of the topics to be discussed, showing them to be of interest and value. The meeting will be held in the German House, Thirteenth and Main Streets. The social features will be of that attractive character for which the profession of Portland is famous. On Thursday evening a smoker in the gymnasium will be enlivened by various athletic contests, accompanied by a German lunch. On Friday evening the guests will be entertained at a banquet given by the Portland City and County Medical Society. Other features of interest have been arranged for this gathering. An attractive list of entertainments has been prepared for the ladies, and it is hoped the attending physicians will be accompanied by their wives. A cordial invitation to attend this meeting is extended to the profession of Washington and Idaho.

PROGRAM.

Thursday, Sept. 10.

9:30 A. M.

Meeting of House Delegates.

Reports of committees.

10:30 A. M.

Digitalis Heart Block, Dr. T. Homer Coffeen.

Discussion opened by Dr. R. C. Yenney.

Cebrospinal Fluid as an Aid to Diagnosis in Obscure Cases of Syphilis of the Central Nervous System, Dr. Lawrence Selling.

Discussion opened by Dr. William House.

2:00 P. M.

Early Stages of Genitrourinary Cases of Tuberculosis, Dr. George S. Whiteside.

Discussion opened by Dr. G. S. Peterkin, Seattle, Wash.

Radiographic Diagnosis of Gastroptosis Coincident with Coloptosis, Dr. J. Phillippe Tamiesie.

Discussion opened by Dr. E. B. Pickel, Medford, Ore.

The Value of Decompression Operation in Disorders of the Brain. A new and Conservative Procedure, Dr. K. A. J. Mackenzie.

Discussion opened by Dr. B. F. Boyden, Pendleton, Ore.

Present Status of Treatment of Goiter, Dr. T. M. Joyce.

Discussion opened by Dr. A. E. Rockey.

8:30 P. M.

Early Stages of Genitourinary Cases of Tuber-

Friday, Sept. 11.

9:30 A. M.

Meeting of House Delegates.

10:30 A. M.

Conservation of Vision, Dr. Joseph L. McCool.

Discussion opened by Dr. J. J. Emmons, Medford.

Progress in Orthopoedic Surgery, Dr. E. A. Rich, Tacoma, Wash., and Dr. Charles R. McClure.

Discussion opened by Dr. Clarence W. Keene, Silverton, Ore.

2:00 P. M.

Report of nominating committee.

Election of officers.

President's address.

Standardization and Supervision of Hospitals, Dr. Calvin S. White.

Symposium on the Gallbladder.

1. Mucous Glands of Gallbladder, their Origin, Pathology and Clinical Significance, Dr. J. Earl Else.
2. Early Diagnosis and Treatment of Gallstones, Dr. George F. Koehler.
3. When to Drain and When to Excise the Gallbladder, Dr. Andrew C. Smith.

Discussion opened by Dr. J. A. Pettit.

Auto-Sero-Therapy in General Practice, Dr. E. A. Pierce.

Discussion opened by Dr. H. J. Clemmons, Salem, Ore.

7:00 P. M.

The Association will be guests of Portland City and County Medical Society at dinner at the Portland Hotel.

WASHINGTON ASSOCIATION AT NORTH YAKIMA.

The twenty-fifth annual session of the Washington State Medical Association will meet at North Yakima, 21st to 23rd of this month. The program prepared for this meeting varies somewhat from those of recent years, the most striking difference being the reduced number of papers presented. According to a recently passed by-law not more than three papers shall be read at any one session or section meeting. This will explain the apparently abbreviated program which is printed herewith. It will also be observed that the number of subjects considered is not so great as at former meetings, the officers believing that better results will be obtained by giving an opportunity for thorough discussion of a few subjects rather than crowding a great many papers into a meeting and cutting off discussion, as has occurred in times past.

It is hoped that a large attendance will be present at this meeting. Only once in the history of the association has it met in Central Washington. This will offer an opportunity for members in other parts of the state to view the attractions and varied features of that fertile section of which North Yakima is the center. Beside the attractions of the program other features of entertainment will be provided that will help to make this visit one of pleasure that will long be remembered by all visitors, which will be announced at time of the meeting. It is desired that those wishing hotel accommodations should communicate with Dr. W. L. McClure, of North Yakima, at as early a date as possible.

PROGRAM.

Sept. 21, 9:00 A. M.

House of Delegates.

Report of officers and committees.

Special message on business reforms by the president.

2:00 P. M.

General Assembly.

Annual address of president, by C. J. Lynch, North Yakima.

1. Sera Diagnosis and Therapy, by O. J. West, Seattle.

Discussion opened by C. S. Wilson, Tacoma.

2. Summary of Recent Advances in Orthopedic Surgery, by E. A. Rich, Tacoma.

Discussion opened by C. F. Eikenberry, Spokane.

3. X-ray Diagnosis in Gastrointestinal Disorders, by A. E. Rockey, Portland, Ore.

Discussion opened by S. W. Mowers, Tacoma, and G. M. Horton, Seattle.

Sept. 22, 9:00 A. M.

General Assembly.

Symposium on Goitre.

4. Prevalence and Distribution in Northwest, by D. C. Hall, Seattle.

5. Causation and Manner of Prevention, by J. R. Brown, Tacoma.

6. Treatment:
   (a) Medical, by C. W. Sharples, Seattle.
   (b) Surgical, by Fred Epplen, Spokane.

Discussion opened by McRae Smith, Bellingham; J. B. Eagleson, Seattle; D. H. Palmer, Seattle; W. C. Cox, Everett.

2:00 P. M.

Public Session.

7. Health Conservation, by E. R. Kelly, Seattle.

Discussion opened by Thomas Tetreau, North Yakima.

8. Political and Economic Aspects of Municipal Sanitation, by J. S. McBride, Seattle.

Discussion opened by J. B. Anderson, Spokane.

9. The Physician and Questionable Methods of Influencing the Public, by Alfred Raymond, Seattle.

Discussion opened by L. L. Love, Tacoma.

Sept. 23, 9:00 A. M.

House of Delegates.

Election of officers for ensuing year.

General Assembly.

10. Results of Treatment of Fractures, illustrated by radiographs and slides, by J. W. Mowell, Olympia.

Annual Report of House of Delegates.

2:00 P. M.

General Assembly.

Symposium on Industrial Insurance.

11. General Considerations, by H. E. Allen, Seattle.

12. Standpoint of Industrial Commission, Mr. F. J. Daggett, Olympia.

13. Standpoint of Employer, by Mr. J. J. Donovan, Bellingham.

14. Standpoint of Employe, by Mr. S. P. Marsh, Everett.

15. Standpoint of Physician, by J. M. Semple, Spokane.

General discussion.

ANNUAL MEETING OF UTAH MEDICAL ASSOCIATION.

The twentieth annual meeting of the Utah State Medical Association will be held in Salt Lake City, Sept. 29 and 30. The following papers will be presented by local members: C. W. Stewart, Salt Lake, X-Ray Diagnosis of Gastrointestinal Conditions; A. Ray Irvine, Salt Lake, A Red Eye; E. H. Smith, Ogden, Some Modern Conceptions of Heart Disease; Clarence Snow, Salt Lake, Desirability of Early Treatment of Precancerous Lesions; R. W. Ashley, Salt Lake Health Department, Clean Milk for the Smaller Towns; J. W. Bard, Provo, Ruptured Abdominal and Pelvic Viscera; Ezra C. Rich, Ogden, Treatment of Appendicitis.

The following visiting physicians will participate in the meeting: William E. Schroeder, Chicago, surgical subject, exact title later;

A. F. Jones, Omaha, surgical subject, exact title later; D. B. Pemister, Chicago, Repair of Bone Defects by the Use of Autogenous Bone Grafts; Jabez N. Jackson, Kansas City, surgical subject, exact title later; Frederich R. Green, Chicago, secretary of Council on Health and Public Instruction, A. M. A., Medical Legislation; Arthur D. Dunn, Omaha, The Role of the Ductless Glands in the Function of Growth.

This is a partial program, to which more papers will be added later. One afternoon will be given over to clinics, embracing surgical, medical and mental cases, by Horace G. Merrill, A. L. Castleman, W. R. Tyndale, Le Roy Pugmire, D. H. Calder and W. Brown Ewing.

The committee on scientific work is looking forward to a very interesting and instructive meeting. It is hoped a full attendance will be present. The usual "get acquainted" banquet will be held.

REDUCED FARES TO ASSOCIATION MEETINGS.

Particular attention of those attending the meetings of the Oregon and Washington associations this month is called to the matter of reduced rates to Portland and North Yakima. In Oregon the Southern Pacific, Oregon-Washington Railroad & Navigation Co. and Oregon electric lines have provided for the one and one-third fare for the round trip to Portland.

For the North Yakima meeting all railroads in Oregon, Washington, Idaho and British Columbia have made similar provision. In order to obtain this rate you must get a receipt from your local agent on purchasing the ticket to your destination. On presentation of this to the secretary of the meeting you will be entitled to a return ticket at one-third fare, providing fifty such receipts are presented to the secretary. Therefore, it is obvious that everyone attending the meeting should not fail to secure this receipt in order to give all the benefit of the reduced fare.

Those living near Portland and North Yakima should especially observe the necessity of getting receipts at time of purchasing tickets, as otherwise those from a distance may be deprived of the benefit of this reduction.

MEDICAL NOTES

OREGON.

July Meeting of the Examining Board. The Oregon Board of Medical Examiners held their summer meeting in Portland, July 7-9. There were 73 applicants, of whom 44 were successful. There were 13 women, 10 of whom succeeded in obtaining licenses, 1 of whom came from India. Thirteen osteopaths came before the board, 9 of whom were successful.

The following is the list of successful applicants with their addresses:

B. B. Bachelder, Portland.
I. C. Brill, Portland.
L. R. Bryan, Union.
P. M. E. Carstens, Beaverton.
C. E. Cashatt, Portland.
C. F. Cropp, Monument.
W. E. M. Devers, Portland.
R. M. Dodson, Baker.
R. V. Ellis, Comet, Alaska.
Alice L. Ernest, San Francisco, Cal.
M. V. Forrest, Portland.
Lillian E. Fowler, Portland.
Ethel N. Hart, Portland.
G. L. Hynson, Portland.
E. C. Joseph, Portland.
T. M. Joyce, Portland.
Leona Lavanture, Portland.
Harriet Lawrence, Portland.
J. D. McLaren, Portland.
Daniel Meyers, Portland.
R. E. Miller, Portland.
William Moffat, Vancouver, B. C.
F. R. Mount, Oregon City.
C. V. Nelson, Salem.
J. G. Radabaugh, Pleasant Hill.
John Raihala, Portland.
C. M. Rosin, Mellican.
Harry Schwartz, Portland.
W. F. Shaw, Medford.
B. F. Smith, Bridal Veil.
Sarah E. Smith, Newberg.
Zophar Tharp, Toledo.
O. E. Utzinger, Astoria.
O. C. Vandervert, Portland.
C. B. Wade, Roseberg.

Osteopaths.

Anita E. Bohnsack, Portland.
Mabel J. Doring, Portland.
Jessie B. Farrior, Seattle, Wash.
Lois M. Fear, Portland.
Elvon C. Hiatt, Payette, Ida.
Jennie E. Phelan, Cherokee, Ia.
Emil Rosenburger, San Francisco, Cal.
Effie Walling, Grants Pass.
G. R. Wells, Portland.

Smallpox Epidemic. Portland has had a slight epidemic of smallpox in the Mount Scott district. The disease started at a party where some fifteen children were exposed. The antivaccinationists are numerous in this district and the health officers are experiencing some little difficulty in protecting the population.

Hospital at Enterprise. The county court house at Enterprise has been taken over by the East Oregon Lumber Company and transformed into a hospital, which will be under the charge of Drs. C. T. Hockett and S. D. Taylor.

The Oregon Soldiers Home, at Roseburg, has been damaged to the extent of $800 by fire. About forty patients were in the hospital at the time but were removed without accident.

Dr. C. W. Ross, of Lebanon, who has recently been commissioned assistant surgeon in the Navy Reserve Corps, has been ordered to report to Mare Island for duty.

Dr. J. B. Taylor, of Eugene, has left for a short visit in California, after which he will take up his residence in Seattle.

Dr. B. F. Scaiefe and Miss Nellie B. Workman, of Eugene, were married July 28.

WASHINGTON.

Washington Association for Prevention and Relief of Tuberculosis. The annual meeting was held at Tacoma, July 28-29. The attendance was good and much interest was displayed. Special attention was paid to plans for the meeting of the National Association in Seattle in 1915. Dr. Quev'i was for the fifth term elected president, an indication of the value and appreciation of his services. The following officers were elected for the ensuing year: President, Dr. Christen Quevli, of Tacoma; honorary vice-presidents, Gov. Ernest Lister, Rev. E. J. O'Day of Seattle, Rev. W. F. Keator of Olympia, E. S. Meany of Seattle, E. A. Bryan of Pullman; vice-presidents, Dr. Wilson Johnston of Spokane, Dr. C. A. Smith of Seattle; treasurer, Miss M. L. Denny of Seattle; secretary, Prof. John Weinzirl of Seattle; executive secretary, Miss B. I. Beals of Seattle.

Tuberculosis Sanatorium at Spokane. A site composed of 43 acres of land, situated about two miles east of Spokane, has been selected by the county commissioners for the new tuberculosis sanatorium, work upon which will be started as soon as the State Board of Health gives its approval. The sanatorium is to cost $50,000.

Pierce County Sanatorium. The cornerstone of Pierce County's new tuberculosis hospital at Tacoma was laid during the session of the Washington Association for the Prevention and Relief of Tuberculosis and work is at present well under way.

Sunnyside Sanitarium. A new sanitarium has been opened at Sunnyside, consisting of several tent houses for convalescent cases in addition to the sanitarium building.

The Naval Appropriation Bill recently passed at Washington carried an item of $40,000 for improvements to the hospitals at Puget Sound and Mare Island. A considerable part of this will be used in building the contagious wards at Bremerton.

Pension Examiners. Drs. C. C. McCown and R. S. Thompson, of Vancouver, and Dr. J. S. Smith, of Bellingham, have been appointed pension examining surgeons for their respective cities.

Elected Associate Fellow. At the annual meeting of the American Proctologic Society, held at Atlantic City, June 22-23, three members were elected Associate Fellows of the society, one of whom was Dr. W. H. Axtell, of Bellingham.

Dr. Stewart Trask, recently of Seattle, has located in Burlington, where he will be associated with Dr. H. C. Cleveland.

Dr. A. P. Ryan, of Vancouver, has been operated on for appendicitis and has now returned to his duties.

Dr. W. E. Joiner, for the past two years surgeon to the Pacific steamship Minnesota, has located in Seattle for practice.

Dr. W. W. Harrington, of Spokane, has been operated on for appendicitis and is recovering nicely.

Dr. Chas. Bridghan and Miss Edith N. Ellenwood, of Mansfield, were married July 29.

OBITUARIES.

Dr. John Russell died at Portland, Ore., July 25, from acute nephritis after an illness of seven weeks. He was born in Oregon in 1886, and was proprietor of the Lakeview Sanitarium at Lakeview.

Dr. A. L. Hegler, of St. John, Wash., died at St. Luke's Hospital, Spokane, Aug. 17, from general septicemia resulting from infection in the mouth. He was born in Tennessee, in 1870, and lived in St. John for fourteen years.

Dr. R. T. Freeman, recently of Tacoma, died on the Pacific Mail steamer Pennsylvania, July 16, when two days out from Panama, as a result of disease of the heart. He was 71 years of age, and a graduate of Guy's Hospital, London. He formerly lived in Tacoma, but in recent years has been surgeon on various Pacific steamships.

Dr. W. B. Cunningham, or Orenco, Ore., died Aug. 13, at Sierra Madre, Cal., where he had been residing for a year on account of his health. He had lived at Orenco for five years, going there from West Virginia.

Dr. Philip F. Dillon died at Anacortes, Wash., July 31. He was born in Boston, Mass., in 1843. He served through the civil war in a Massachusetts regiment. In 1876 he graduated from the medical department of the University of Minnesota. He was appointed surgeon of the soldiers' home at Bristol, R. I., where he remained for sixteen years. He had resided in Anacortes about eight years.

REPORT OF SOCIETY MEETINGS

CLALLAM COUNTY MEDICAL SOCIETY.

Pres., D. H. Craig, M. D.; Sec., W. H. Taylor, M. D.

The regular monthly meeting of the Clallam County Medical Society was held in the Dream Theatre, Port Angeles, on Tuesday, July 21.

Dr. D. E. McGillivary was elected a delegate to the annual meeting of the State Medical Association, with Dr. William H. Taylor as alternate. Dr. Stuart Wilson, of Tacoma, was present and gave a very interesting paper on tureculosis, accompanied by lantern slides.

The regular monthly meeting of the Clallam County Medical Society was held in Tuesday, August 18, in the Commercial Club rooms, Port Angeles. Meeting was called to order by President Daniel Craig.

Papers.

General Talk on Fractures. By Edward A. Rich, Tacoma.

Left-sided Abdominal Pain. By Clarence Gammon, Tacoma.

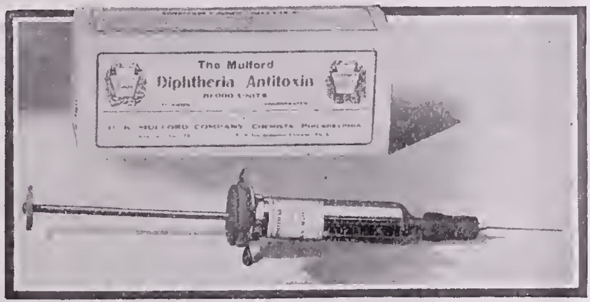
Both papers were excellent and were discussed by all members present.

After the business meeting the members adjourned to the Olympic Hotel for dinner.

Diphtheria Antitoxin Mulford

In 1894 **the first commercial biological laboratory for the production of diphtheria antitoxin** in the United States was established by the **H. K. Mulford Company.** In the twenty years that have elapsed since its introduction the mortality of diphtheria has been reduced from 38.4 per cent to less than 10 per cent, and it is now the general belief that if diphtheria antitoxin is administered in sufficient doses during the first 24 hours practically all patients will recover.

The H. K. Mulford Company from the first applied the most accurate methods known for standardizing diphtheria antitoxin. Standardization has since come into general use, and a method has been incorporated into the U. S. Pharmacopeia.



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BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Psychanalysis; Its Theories and Practical Application. By A. A. Brill, Ph. B., M. D., Chief of Clinic of Psychiatry and Clinical Assistant in Neurology, Columbia University Medical School, etc. Second edition, thoroughly revised. Octavo of 393 pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.00 net.

Much interesting material will be found in this volume either agreeing or different from Freud in his theories. Some new reports are herein added on artificial dreams, collecting manias, pathologic homosexuality, etc. Emphasis is laid on the danger of any other than psychiatrist or neurologist attempting the psychanalytic methods, as these are trained or supposed to be along such lines. The writer emphasizes the harm he has seen done in cases treated by the untrained and aptly compares it to one practising surgery without knowledge of anatomy. Whether the medical profession generally can force themselves to believe many conclusions stated in this book, nevertheless its contents will be found interesting reading. The reviewer's experience with the human family has not led him to the conclusion that all conditions enumerated herein have the sexual as a basis and, while agreeing with many statements as facts, takes a more conservative view of the causes.

SMITH.

General Surgery. The Practical Medicine Series, Vol. II, Series 1914. By John B. Murphy, M. D., LL.D., F. R. C. S., Eng., F. A. C. S. 608 pages. Price $2.00. The Year Book Publishers, Chicago.

This is a notable volume in this series and one is pleased to find so much that is new in the literature during the year's work. The various methods of anesthesia are well reported and we are able to follow the advances made by intratracheal ether anesthesia, local, brachial and spinal anesthesia. A great variety of methods of specific medication are freely reviewed and include that of salvarsan, emetine and vaccines in their various forms. A note on the diphtheroid bacillus of Hodgkin's disease and value of vaccine therapy is included. We note a greater interest in thoracic surgery, particularly as applied to tuberculosis and wounds of the heart. The book is teeming with suggestions and includes many comments by the author. It is a most excellent review.

FORBES.

Disease and Its Causes. By W. T. Councilman, A. M., M. D., LL.D., Professor of Pathology, Harvard University; published by Henry Holt & Co., New York.

This is as fascinating as a love story; in fact, it is such by an ardent swain sueing at the shrine of his goddess, Science. His presentation is without sentiment whatever, though romantic in description, each page giving promise of delight on the next. The author declares "the book is not written for physicians," but its 253 pages can be devoured by all such with great profit and delectation. He manifests prodigious research and says "the list of investigators from whose work the knowledge of disease has been derived would be too long to cite." So, even a brief review would consume much space beyond that allotted.

One statement worthy of publication refers to maternal impressions on the unborn. "There is no association between maternal impressions and malformations, although there have been striking coincidences. All malformations arise during the first six weeks of pregnancy, * * * during which there is little consciousness of pregnancy. * * * There is neither nervous nor vascular connection between the mother and child. * * * The same types of malformation which occur in man are also seen in birds, and it would require a more vigorous imagination than is usual to believe that a brooding hen could transmit an impression to an egg and that a headless chick could result from witnessing the sacrifice of an associate. * * * The belief has been productive of great anxiety and unhappiness during a period which is necessarily a trying one and should be dismissed as being both theoretically impossible and unsupported by fact." This book affords diversion and inspires new phases for lucubration.

CRUTCHER.

The Early Diagnosis of Tubercle. By Clive-Riviere, M. D., F. R. C. P., Physician to Out-Patients City of London Hospital for Diseases of the Chest, etc. Cloth, 260 pages, $2.00. Oxford University Press, London and 35 W. 32nd Street, New York.

This work shows careful study and thorough knowledge of the subject and with the exception of a few minor points is quite reliable. In connection with his discourse on pleural effusion the author states that one must not be too sure of tuberculosis even in the presence of rales in lung or apex, since the lung may be the seat of hyperemia. This is but one of the numerous points which go to make the work a specialist's book. If the general practitioner be restrained from making a diagnosis on pleural effusion and rales, he surely will not make one on the obscure evidences of early apical consolidation. The reviewer is convinced that pleural effusion is always tuberculous or will very soon be followed by other manifestations of the disease and should therefore be treated as tuberculosis. The author states as his experience that "some alteration to skilled percussion can be found over every diagnosible lesion and that a diagnosis of phthisis can rarely be made without it." The book should be very useful to those who will give it the careful perusal it deserves. That portion dealing with physical signs is especially good and in a succeeding division a splendid resume of the more important diagnostic tests is given, with an occasional original contribution.

SLYFIELD.

NORTHWEST MEDICINE

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF THE PACIFIC NORTHWEST.
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Vol. VI. New Series. OCTOBER. 1914. Vol. VI. No. ~~9~~. 10

ADDRESS

PROBLEMS OF THE WASHINGTON PROFESSION.*

By C. J. Lynch, M. D.

NORTH YAKIMA, WASH.

I wish at the beginning to thank you for the high honor bestowed in making me your president. The confidence thus shown must make any normal mind glow with appreciation, and yet, closely following, comes the feeling of responsibility, the realization of important tasks ahead and the hope that, in matters vital to the best ideals of our members, in questions affecting the welfare of the public which we serve, my jurgment might prove adequate and just. My brief experience in this office has been very pleasant. It is a position which calls for broadness of view, unselfishness and a mind gifted along constructive lines. From what I know now of this office, not criticizing you for past mistakes, I must urge, for the good of the cause, that in the future selection of a president, great care should be exercised to procure a man of mature mind, experienced and imbued with the very highest ideals as to professional conduct. He should possess professional ability and a capacity for the economic phases of the association work. In all seriousness, then, let me urge you in making your selection to eliminate the so-called political or geographical reasons and any other not compatible with the best interests of this association. No true and lasting advance can be made unless that advancement is based upon the welfare of the public which we serve.

As you well know, our organization is purely a voluntary one. Any work accomplished represents personal sacrifice of those who undertake it. We are not organized, as so many laymen believe, alone for our selfish ends. Indeed, no organization is more unselfish. It behooves the layman to take note that his interests are closely bound to ours, and he should have a care that, while reforms may be in order, we be not destroyed in the process. The position occupied by the profession is influenced both by our own minds, over which we should have control, and outside forces, over which we have only partial or no control.

The organization's first duty is that of fostering and compelling high ethical standards of conduct of its members. By ethical conduct is meant the guiding principle which puts the patient's welfare first and the doctor's second, and couples both with fair and courteous consideration. I am putting ethics first for the reason that an unscrupulous doctor, though able, is most undesirable from any standpoint.

Its second duty is to aid in every way scientific advancement, reaching back to the very school and uplifting standards of education.

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*President's Annual Address, read before the Twenty-fifth Annual Meeting of Washington State Medical Association, North Yakima, Wash., Sept. 21-23, 1914.

Its third duty is caring for the economic welfare of the physicians. This is much more important than it first seems. Professional men should be free from pecuniary embarrassment, in order to accomplish that growth and to give that service which the community needs from them. Physicians have habitually become so lenient or careless about their accounts that many people have become accustomed to neglect them, while many others refuse to pay just debts. There can be no greater loss to our citizenship than the loss of self-pride, so that, when any one evides a just debt that he could pay, the first great break in good citizenship takes place. These are the people usually who fill our charitable institutions, who haunt our free dispensaries, becoming a great burden upon our resources. Therefore, to make a just charge and to collect it by proper means is not only fair to the physicians, but indispensable in aiding honest conduct.

Let me call your attention now to a very disagreeable subject, but one on which I feel it my duty to dwell. It has to do with methods of some physicians, many of them enjoying excellent reputations among the laymen but, measured by any proper business standard, would not get a passing grade. Under this category are many types of able, accomplished men with enfeebled self-pride and respect. Many of these have adopted a calculating, stealthy means of procuring work, some singly, others in groups. Is it not a pity that such men disregard the estimate and esteem of our very best practitioners, and continue to cater to and humor the public in order to procure work? If you will follow their methods, you will be led in many directions. Some use lodge affiliations as an aid, some church, some the club, some always apparently busy; some control a hospital, some have a staff of younger men under them. It requires no flight of the imagination to understand the effect of their teaching and example upon these younger men. I have more respect for the advertising charlatan than for the man having all necessary qualifications of a good physician except self-pride and honesty. Success is not measured by dollars, a large practice, nor by influence with what is called "the best people." True success can never be attained except when it is colored with the pride of honest achievement. These men cannot be proud of a large practice when built up upon false assumption, at the expense of an unsuspecting public or at a cost of false education of the public. No man of proper self-respect will take success except when it comes through proper channels.

We come now to the summarization of problems before us. I will name some of the most important, being content with this, as the House of Delegates has already begun work upon them.

1. A needed amendment to our present practice act to forbid men licensed under the act from practising medicine or surgery, unless they can show proper training in these branches. I have reference here to osteopaths and other so-called drugless healers who, as soon as they receive a license, begin the prescribing of drugs and to practise surgery. This is an acute situation and should be dealt with in a summary manner, before the public is victimized.

2. A resolution setting forth the correct principles which should be embodied in any first aid amendment. In this connection I shall read to you the recommendations and criticisms concerning first aid act which I will hand to the House of Delegates.

RECOMMENDATIONS.

1. That injured workmen have right to choose a physician from among those regularly licensed and practising in the county in which injury took place.

2. That a schedule of fees be adopted, representing say 75 per cent. of the regular going charges made by physicians of said county for medical and surgical services, these fees to be guaranteed by the employer of said injured workmen.

3. That a cooperative plan of securing the funds necessary be arranged between employer and employe, say in the ratio of 60 to 40 per cent., thus to insure the mutual interest of both parties in avoiding accidents and in minimizing medical and surgical costs.

4. That no part of this fund shall be diverted or used other than for the purpose for which it was created; the fund to be administered by representatives of both parties contributing.

5. That in case of a dispute arising between the physician in attendance and those administering the funds, a referee board, a majority of which should consist of physicians from that county, be created to settle the disputes, for the reason that laymen can not accurately judge the value of professional services.

CRITICISMS.

We oppose contract practice for these reasons:

1. It deprives the individual of the right of choice of his physician which is an inherent right. It weakens his discrimination as between physicians.

2. It destroys the most potent assurance of efficient service, namely, free competition among physicians.

3. Contract practice shelters collusion between employer and physician, if both parties are not scrupulously honest.

4. Technical ability and equipment on the part of the physician do not alone guarantee conscientious treatment in every case.

We oppose Initiative Measure No. 9 chiefly for these reasons:

1. It will not secure cooperation between workmen and employer in preventing accidents.

2. It will prove wasteful by causing workmen to disregard cost of treatment.

3. Many disputes will arise as to value of physicians' services, and will encourage dishonesty of all parties concerned.

4. The employer is burdened with a definite tax but is given no assurance as to the character of physicians the workmen must employ, nor is any penalty imposed upon the workmen for extravagant use of employer's funds, although we approve of the free choice of physicians, with the restriction made that he be regularly licensed and practising in the county in which the injury occurred.

We oppose any legislation that does not

1. Bind all parties concerned to the responsibility of lessening accidents.

2. That encourages dishonest practice and wasteful methods.

3. That would in any way lessen the self-respect of either employer, workman or physician.

And, finally, we oppose any act that aims to indemnify our workmen, but does not at the same time tend to strengthen them in their judgment and moral responsibility.

Further recommendations to you are:

1. Abating causes of malpractice.

2. Legal defence of our members against unjust malpractice suits.

3. Education of the public as to the aims and purposes of this association.

4. I come now to the most important recommendation of all, that this body deliberately set about to reinforce its own organization, to centralize its own forces and establish a paid force to do the work of this association, not spasmodically, but throughout the year. There can be no doubt that the interest of the people of this state, and particularly that of our members, will greatly advance with such a step. The necessary funds can be procured by increasing state dues from one to three dollars.

If you see fit to follow this advice, there should be no need to worry as to our future, for we are asking nothing but fairness, and justice is a strong ally. It seems to me that every physician should gladly support this plan, since the future conditions under which we work will thus be safeguarded, better than in any other way. Therefore, in the light of growing necessity, gauging the things to be accomplished, and realizing the impotency of the forces we have to work with, may I urge you, finally, as an evidence of increasing business enlightenment, to adopt this plan of fulfilling our obligation to ourselves and to the public.

Once More the League for Medical Freedom.—"The National League for Medical Freedom has again exercised its divine right of protesting against anything and everything beneficial to the public health." In its issue of September 19, The Journal of the American Medical Association calls attention to the history of this organization, and comments on its most recent outburst. "The latest protest on the part of the League is directed against the United States Bureau of Education. In the report of the Commissioners of Education for 1913, in a series of twenty-five or thirty papers by experts on the progress of education in different fields, appears an able summary of the progress in medical education, by the secretary of the Council on Medical Education of the American Medical Association. This Council, it is hardly necessary to state, has for eight years past carried on an extensive study of medical education in this country. It appears that about the time this report was being prepared, an Iowa member of the National League for Medical Freedom wrote a paper objecting to the medical inspection of school children, which was sent to the Commissioners of Education with the demand that it be printed as a part of the Bureau of Education publications. The United States Commissioners of Education, it seems, declined to publish the article, wherein the National League for Medical Freedom sees evidence of a dark and awful conspiracy between the American Medical Association and the United States Government, and proceeds to protest. It is barely possible that the reason why the report on medical education was gladly accepted and the tirade on medical inspection of schools was declined was that the report was the result of eight years of careful study, while the "protest" was the usual jumble of vague charges, exaggerated statements and unsupported assertions. In a word, it is barely possible that the Bureau of Education acted as it did because one paper was worth publishing and the other was not."

ORIGINAL CONTRIBUTIONS

SLIDING HERNIA.*

By Paul Rockey, M. D.,

PORTLAND, ORE.

Sliding hernia, slipped or extrasacular hernia is that in which the viscus is incompletely covered by peritoneum, and lies in part outside the sac. (Figs. 1, 2, 3.) The cecum is generally completely covered by peritoneum and, therefore, its presence in a hernia, which may be either inguinal or femoral, and which may be either right or left, though generally right-sided, is that of a simple hernia lying in a complete sac, from which it can usually be readily reduced into the abdominal cavity.

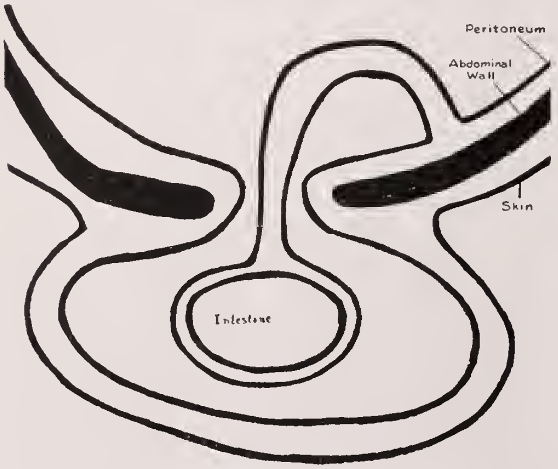

Fig. 1. Diagram of Ordinary Hernia. The Intestine Lies in a Peritoneal Sac.

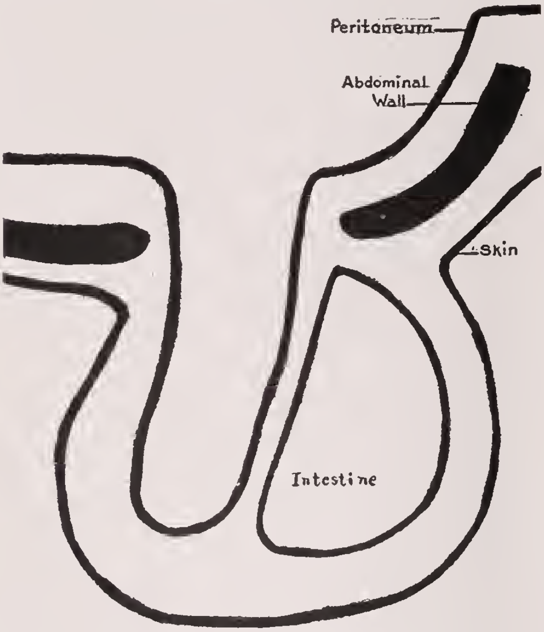

Fig. 2. Sliding Hernia with Peritoneal Sac on one side only.

This is also generally true of the appendix, for in hernias it is generally similarly free but sometimes is more or less extraperitoneal. Sometimes the cecum in a hernia is not free but is partly extrasacular. The ascending colon may be a free loop from the persistence of a wide mesocolon but it is generally a sliding hernia because the ascending colon is generally incompletely covered by peritoneum (Fig. 4).

The descending colon may be found in a hernia and when so found is generally a sliding hernia. It is the iliac portion of the descending colon that is most likely to form the hernia. The pelvic or free sigmoid may be present as a sliding hernia, as may the bladder or the ureter. If a part of the small intestine were so dragged into a hernia, as at the ileocolic junction, that its mesentery were unfolded to form part of the sac, it too might become in part extraperitoneal. It is said that the uterus and tube may be thus involved but never the ovary, stomach, liver, spleen, transverse colon or omentum. A sliding hernia may lie in the

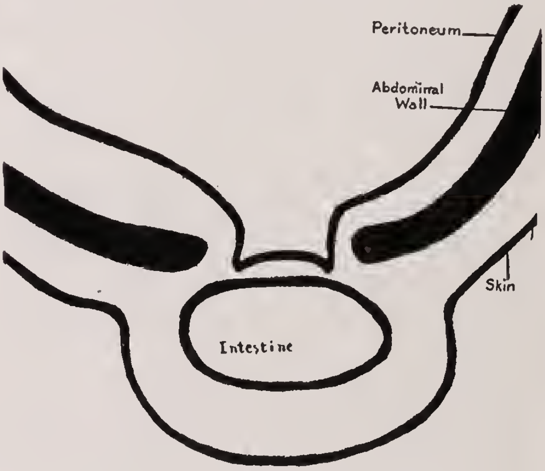

Fig. 3. Sliding Hernia without Peritoneal Sac.

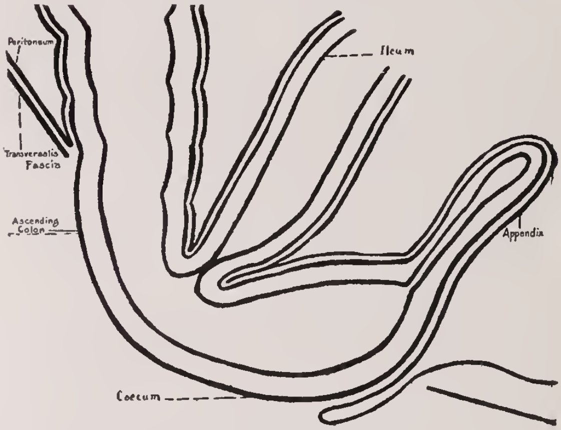

Fig. 4. "Hernie par Bascule." (Mosshcowitz, Ann. of Surg., Vol. LIX. No. 4.

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*Read before Portland City and County Medical Society, Portland, Ore., July, 1914.

femoral canal or inguinal canal, or may extend into the scrotum.

In addition to the sliding hernia, the sac may contain any other organs that a similarly situated hernia might contain, as small intestine or omentum. The sliding hernia itself may consist of an afferent and an efferent loop (Fig. 5). Both may be extrasacular or one of them may be free. The proportion of the circumference of the gut that is uncovered by peritoneum may vary. The firmness of the attachment of this uncovered portion may vary from very dense to very fragile connective tissue. The nutrient vessels of the uncovered gut may lie extrasacular. The descending colon and sigmoid, as sliding hernias, could occur only on the left side. The cecum and ascending colon, as sliding hernias, could occur only on the right side. The bladder could occur on either side.

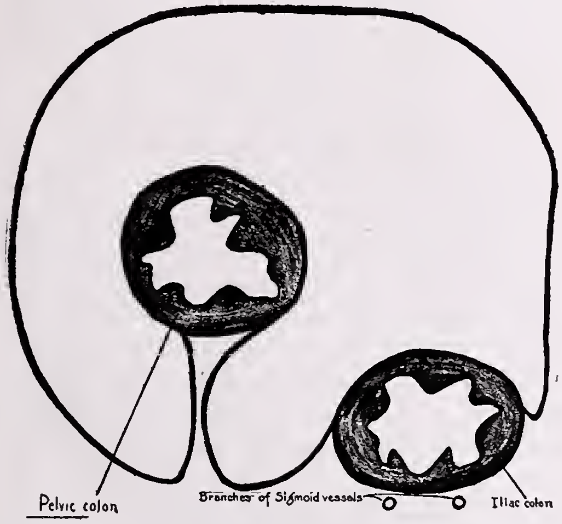

Fig. 5. Sliding Hernia with Afferent and Efferent Loop. (From Walton, Ann. of Surg., Vol. LVII. No. 1.)

The amount of sac may vary greatly. Treves went so far as to say that a sacless sliding hernia was impossible, but other authorities hold that it is possible, and have described it (Fig. 3).

It has been held by some that the cecum is always completely covered by peritoneum and that it cannot form a true sliding hernia. Cases of true sliding hernia of the cecum have, however, been described.

It is well to bear in mind the changes that take place in the ordinary development of the intestine and the variations of these changes that may occur. Remember the formation of the gut and its mesentery, and their bending; the budding of the cecum, the rotation of the gut and the fusing of part of its peritoneum to make the ordinary condition found in the adult, as in the ascending colon. We must remember, here, as we have in enteroptosis, the wide variations found in the positions of various parts of the intestine, also in the wideness and narrowness of mesenteries, and in the amount of peritoneal covering of partially covered portions.

A congenital cause is assigned to some sliding inguinal hernias, by adhesion between the uncovered parts of the ascending or descending colon and the testicle or its gubernaculum. Many sliding hernias appear as if the intestine were adherent to the sac and this has been assigned as a cause, but it has been pointed out that it is not a cause of true sliding hernia and no such adherent layers of peritoneum can be separated or demonstrated.

Undoubtedly some sliding hernias may be produced by the increasing size of simple hernias, dragging adjacent peritoneum into the sac, until they drag in the portion covering the partly uncovered piece of intestine (earlier stage of Fig. 2 or later stage of Fig. 1). Others may be caused by a piece of partly uncovered intestine lying over the inguinal ring and then being pushed through it. This might happen in a case of enteroptosis. This would be the most likely cause of the sacless and nearly sacless varieties (Fig. 3). As sliding hernias increase in size, their sacs tend to become larger, so that the real sacless hernias are smaller.

There is a congenital cause and some cases in children have been described, but most cases occur in adults and most at and after middle life.

Sufficient reports have not been made to give the exact commonness of occurrence. Many surgeons have found them but have found them irregularly. Wier suggested that their occurrence might be as frequent as about a third of the number of hernias in which the large intestine was found. He reported six cases of his own in 1900. In 1909 Hotchkiss reported six cases, one in 1905, one in 1906, one in 1907, and three in 1909, of which the last two were operated on on the same day at Bellevue Hospital. In 1913 Albert J. Walton, of London, reported four cases. Dr. Coley, of New York, has at various times reported operating on several of these cases. Many surgeons seem to have encountered a moderate number of them. Previous to this year my father had operated on two or three, all of which were left inguinal, and of the nearly sacless variety. This year he and I have operated on five cases which are here briefly reported:

Case 1. Mr. S., age 41, white, real estate agent. Left inguinal hernia 15 years, following fall, truss five years, became painful and ineffective. Severe attacks of pain in left inguinal region at times associated with attacks of constipation; reduction became increasingly difficult.

Operation, Multnomah Hospital, July 11, 1913, by me, assisted by interne, Dr. Hughes. Left inguinal hernia, sliding hernia of sigmoid, intestinal wall damaged in freeing, resection of six inches, end to side anastomosis, drain, repair with transplantation of cord. Known to have had no recurrence some weeks after discharge from hospital, at which time a small opening appeared in the wound and piece of linen suture discharged. Lost sight of since.

Case 2. Mr. W., age 26, white, meter reader. Left inguinal hernia about nine months.

Operation, Good Samaritan Hospital, Aug. 1, 1913, by me, assisted by Dr. Tidball, interne. Left inguinal hernia, sliding hernia of sigmoid. Sac opened, hernia easily freed and reduced, sac closed, repair without transplantation of cord, discharged cured. Known to be still cured.

Case 3. Mr. P., age 47, white, logger. Examined Oct., 1913. Left inguinal hernia, not reducible, diagnosed probable sliding hernia of sigmoid by Dr. Barbee.

Operation, Good Samaritan Hospital, Dec. 17, 1913, by my father, assisted by me. Left inguinal hernia, sliding hernia of sigmoid, practically without sac. Gut freed and reduced, repair without transplantation. Patient remains cured.

Case 4. Mr. O., age 50, white, carpenter. Left inguinal scrotal hernia about ten years. Wore truss which became painful and did not hold hernia.

Operation, Good Samaritan Hospital, Dec. 29, 1913, by my father, assisted by me. Left inguinal scrotal sliding hernia of sigmoid; gut and sac lay over cord and adherent to it to external ring. Peritoneum opened, sac and gut freed and reduced, peritoneum closed, repair without transplantation. Patient remains cured at present date.

Since reading this paper another case has come under our observation.

Case 5. Mr. S., aged 50, white, fisherman. Left inguinal hernia for ten or twelve years. Has worn truss most of the time, especially when at work. Often had severe pain in left groin. Hernia never became irreducible. Left inguinal hernia, appearing on examination like a direct inguinal hernia, but proving at operation to be an oblique inguinal hernia.

Operation, Good Samaritan Hospital, Sept. 1, 1914, by my father, Dr. A. E. Rockey, assisted by me and by my brother, Dr. E. W. Rockey. Left inguinal hernia, sliding hernia of sigmoid. Peritoneum opened, gut reduced, hernioplasty without transplantation of cord. Clamp and cautery hemorrhoid operation by me, assisted by my brother. The patient's postoperative course was satisfactory. He was discharged cured.

Sigmoid in these cases is used in its larger sense; some were probably ileac colon.

The literature on the subject of sliding hernia is not extensive. It is of interest here to note that the occurrence of the bladder in hernias was mentioned in the twelfth and fourteenth centuries. In 1812 Scarpa described the cecum associated in the wall of a hernial sac. The literature of sliding hernia is practically of the past twenty-five years and mostly of the more recent years. Wier's article was published in the Medical Record in 1900; and in the Annals of Surgery, Hotchkiss' article was published in 1909, Walton's article in 1913 with a bibliography of the subject, and Moschcowitz's article in 1914. At present the available information on the subject is not as widely known as the importance of the subject warrants.

The symptoms of sliding hernia are not constant nor definite. All authorities are agreed that diagnosis is oftenest made at operation. Before operation it may be surmised because of the difficulty of holding the hernia with a truss and the difficulty of completely reducing it. The rings of these hernias are said more often to be large. When the bladder is involved, two-stage urination, catheterization and injection may furnish evidence. Where the sigmoid is involved rectal injection and the difficulty of giving large enemata may be suggestive.

Even at operation, where diagnosis is usually made, the diagnosis is not always easy. Moschcowitz says that sometimes it appears as if there were no hernia. This is in the nearly sacless variety, and he goes on to say that the patient and surgeon are fortunate when the diagnosis is made anywhere short of a failure or a calamity. When the sac is opened, the partly covered large intestine may show only by a longitudinal band and a few epiploic appendices, or the gut may be approached from without and its structure recognized. Every surgeon operating on an inguinal or femoral hernia should bear in mind that he may be dealing with a sliding hernia.

The prognosis without operation is that they will tend to increase in size and painfulness, and in the discomfort and disability they cause, that it will become difficult or impossible to hold them with trusses and to reduce them completely. They may strangulate but it is said that they are less likely to than other hernias.

The prognosis in these cases with operation is poorer than in other hernias as regards life, recurrence and unfortunate sequelae. In cases where sliding hernia is suspected before operation, Wier says that he informed the patient to this effect.

Unless otherwise contraindicated, sliding hernias should be operated on but, the diagnosis being made either before or at operation, their operative treatment presents difficult problems, and some of these are not yet fully and satisfactorily solved.

Where strangulation has taken place, but the intestine is viable, operation may proceed as in an unstrangulated case. But in this case it has been suggested that the constricting band be divided, the simple contents of the hernial sac, if there be any, returned to the abdominal cavity, and the sliding hernia left where it is. If in a strangulated sliding hernia, the sliding intestine were not viable, resection would be indicated and might permit complete reduction and satisfactory closure. But anastomosis of partly covered intestine is more difficult and more dangerous than anastomosis of intestine fully covered by peritoneum. Such a case might be drained, although this would add a factor against the success of the repair.

Where the diagnosis is not made until the lumen of the gut is penetrated, its wall injured or its blood supply damaged, the surgeon must choose between repair of the intestine and proceeding as in uncomplicated cases or resection. The complete reduction of a sliding hernia of small or moderate size may be comparatively easy, and in this case it may be only necessary to proceed with the repair.

After the sliding intestine has been freed from the surrounding tissue, even if this has been accomplished with some difficulty and the intestine is of considerable size, it may be pushed through the ring as it is, the ring perhaps having been enlarged for the purpose, and the repair proceeded with. In the earlier cases reported this method was often followed, but the disadvantages and dangers of it in some cases are obvious.

In reports of these cases, where no other ill befell, recurrences were frequent. Here a resection of choice might be made of the redundant sliding loop. Such a case was reported by Juillard, of Geneva, in 1895. In two previous cases he had failed to reduce the hernia. In this case he cut away the protruding bowel and anastomosed the intestine with a Murphy button, completed the repair, and reported a cure. The better chances of success in intestinal anastomosis today increase the favorableness of such an operation.

In freeing the uncovered portion of the sliding hernia, great care must be exercised not to destroy its blood supply. If the sliding intestine be freed, the sac can be so cut as to furnish a piece or pieces of peritoneum which can be turned over and stitched in place to make an artificial mesentery, and then the gut can be returned to the abdominal cavity (Fig. 6). This method is suggested by Wier, Hotchkiss, Walton and others, and is the operation of choice in such cases. It is applicable to the cecum and ascending colon, to the ileac and pelvic colon and to the bladder. The remainder of the sac in such cases cannot only be closed but also its end can be sutured up after the method of Kocher.

Where the appendix occurs in a sliding hernia, it could be returned to the abdomen or removed. Against its removal would be the added danger of infection to the hernioplasty. In favor of its removal would be the possibility of its giving future trouble. Undoubtedly it should be removed if it appeared inflamed or seriously pathologic. Reduction having been effected by any method, the repair is to be proceeded with.

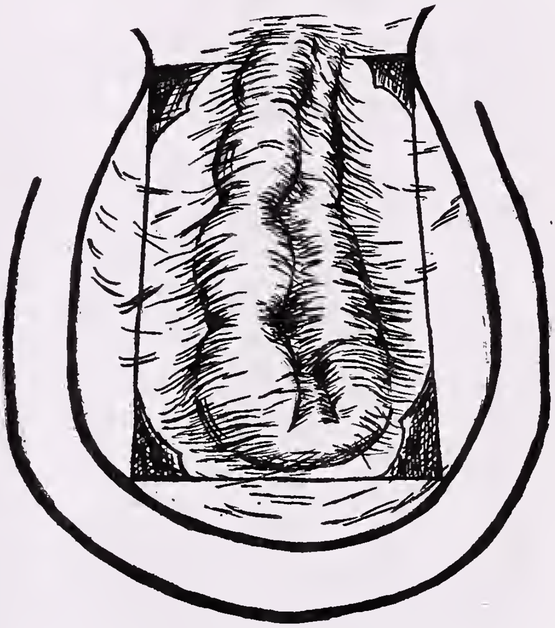

Fig. 6. Outline of Peritoneal Lining of Sac, Utilized as a Flap to Cover Posterior Surface after it has been Freed by Dissection. (Wier, Med. Rec., Vol. LXVII. No. 8.)

BIBLIOGRAPHY.

1. Wier: Med. Rec., Feb. 24, 1900, Vol. LVII, No. 8, p. 309.
2. Hotchkiss: Ann. of Surg., Aug., 1909, Vol. L, No. 2, p. 470.
3. Walton: Ann. of Surg., Jan., 1913, Vol. LVII, No. 1, p. 86.
4. Moschcowitz: Ann. of Surg., April, 1914, Vol. LIX, No. 4, p. 610.

THE VALUE OF NERVE BLOCKING IN THE PREVENTION OF SURGICAL SHOCK.*

By Everett O. Jones, M. D.
SEATTLE, WASH.

The exact nature of the physical changes which underlie the condition of surgical shock has been the object of exhaustive investigation for many years. Of all the theories which have been advanced to explain shock, that of Crile has probably secured the most general acceptance. His theory, in brief, is that harmful stimuli acting through the afferent nerves first stimulate the cells of the vasomotor center, producing a rise of blood pressure, which is later followed by exhaustion of the center, a fall of blood pressure and the condition of shock.

While this theory is not entirely satisfactory, it is the most generally accepted, as explaining more satisfactorily all the phenomena of shock than any other theory.

Further investigation by Crile and his associates has enabled them to demonstrate actual organic changes in the brain cells. As the symptoms of shock are produced, the granules within the bodies of the cells are gradually destroyed. When this destructive process is stopped at a certain point, regeneration of the cell protoplasm takes place. But if carried beyond this point, complete destruction and disappearance of the cell results. Their investigations showed, further, that these phenomena could be produced by a variety of different external stimuli; extreme emotional stimuli, such as fright, extreme physical exhaustion, prolonged pain producing trauma, exposure to extreme changes in temperature, the prolonged administration of anesthetics.

And so Crile has advanced the four following factors as being clinically most concerned in the production of surgical shock: (1) Trauma, (2) hemorrhage, (3) toxemia, (4) psychic influences.

By trauma the physiologic effects of pain are produced equally, whether the patient be conscious or unconscious under the influence of a general anesthetic. The excessive loss of blood has been shown to have a direct effect in producing exhaustion of the cells of the vasomotor center. The factor generally producing toxemia is an excessive quantity of anesthetic. That fear has a direct effect in the production of shock is a clinical fact which every one can substantiate.

In order to eliminate these factors and so reduce not only postoperative mortality but also morbidity, Crile has devised a method of procedure for which he has coined the term anociassociation, that is, the production of a condition in which there is an absence of all noxious influences on the nerve centers. The steps of this procedure are as follows:

(1) The patient receives hypodermically ¼ gr. morphin and 1/150 gr. scopolamin one hour before operation. This quiets the patient, produces a tranquil state of mind and also lessens the required amount of anesthetic.

(2) Since animal experiments have shown that ether in any amount causes more or less destruction of the nerve cells, nitrous oxide and oxygen anesthesia is used entirely.

(3) A most painstaking and exact hemostasis is practised; every little bleeding point is clamped and separately ligated.

(4) The effects of trauma are avoided, first, by an extremely delicate technic by which all rough handling, tearing and bruising of tissues are avoided; second, by infiltrating the field of operation with a local anesthetic so that all afferent nerve fibres are blocked so that the stimuli produced by trauma are prevented from reaching the centers. That is, the physiologic effects of unconscious pain, if one may use the expression, are eliminated.

For this infiltration a ¼ per cent. solution of novocain is used, each structure being carefully infiltrated before it is divided. After the incision is completed and the actual field of operation thoroughly exposed, all the tissues are again carefully infiltrated with a ½ per cent. solution of hydrochlorate of quinin and urea. The reason for this two-fold injection is that the novocain acts rapidly but is of rather short duration, while quinin and urea produces the effects more slowly but it lasts for a number of hours, thus preventing irritation of the stitches and postoperative wound-pain.

The claims for this procedure are:

(1) That postoperative wound-pain is prevented.

(2) That postoperative gas-pains are avoided, since these are caused by stimuli coming to the centers from the wounded abdominal wall, which stimuli produce a reflex inhibition of peristalsis in irregular segments of the intestinal tract.

(3) The so-called aseptic wound fever is prevented.

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*Read before King County Medical Society, Seattle, Wash., Nov. 13, 1913.

(4) Abdominal operations are greatly facilitated by the relaxation of the abdominal walls, rendering retractors and gauze packing usually unnecessary.

(5) Mortality from surgical shock is greatly reduced.

Since Dec. 1, 1912, I have been employing in selected cases the principles of the procedure described. My desire to report my results and impressions is the excuse for this paper. The details of Crile's technic have not been followed in their entirety, but the underlying principles have always been adhered to. In the matter of the general anesthetic, the practical difficulties in the way of employing gas-oxygen anesthesia in Seattle have compelled me to depend upon ether. But I have attempted by the methods of administration employed to reduce the quantity used to a minimum. This has been found to be best accomplished by blowing warmed ether vapor through a mask with an apparatus similar to that of Gwathmey. An examination of the records of anesthesia in one hundred of the cases here reported shows that the average amount of ether administered was three and one-fourth ounces. The records show that for the average operation, lasting from 45 to 50 minutes, two and three-fourths ounces of ether was required to put the patient under and maintain the anesthesia.

In the method of applying the local anesthetic I have also deviated somewhat from the technic as followed by Crile. His procedure is, indeed, the old method of producing local anesthesia by infiltration which was first proposed by Schleich and Reclus. In my work I have preferred to follow the technic of regional nerve blocking as advocated by Hachenbruch and Heinrich Braun. The main nerve trunks supplying the field of operation are carefully blocked and the entire area is surrounded by a zone of infiltration, care being taken not to infiltrate the tissues which are to be severed during the operation, the same attention being paid to every detail as if the operation were to be carried out under local anesthesia only.

By following this method it is possible to complete the whole process of nerve blocking, before the actual operation is started, so that it is not necessary to infiltrate separate layers of tissue as the operation proceeds, thus saving considerable time. By this method it is necessary to use but one solution. In about half the cases here reported I have used the ½ per cent. solution of hydrochlorate of quinin and urea. Lately, I have employed a ½ per cent. solution of novocain with the addition of adrenalin. This has been more satisfactory. The novocain acts much more quickly and with the addition of adrenalin its effects are prolonged quite enough for all purposes.

This method appears to me to have the advantage of being more accurate and of producing a more complete local analgesia than does the simple infiltration of the cut tissues. Indeed, so far as any pain experienced by the patient is concerned, a great many operations could be performed without the aid of a general anesthetic at all. In all of the cases here reported the degree of ether narcosis was so light that the patients slept simply because they experienced no pain to awaken them.

Between Dec. 1, 1912, and Sept. 30, 1913, I have employed the above described method 142 times, performing the following operations: Resection of cervical glands (for tuberculosis 3, for carcinoma 4), 7; thyroidectomies, 17; breast amputation, 1; gastroenterostomies, 5; suspension operations for visceral phthosis, 9; appendectomies, 14; resection of cecum, 1; resection of ileum, 2; resection of sigmoid, 3; ileosigmoidostomies, 3; cholycystostomies, 4; cholycystectomies, 2; splenectomies, 2; prostatectomies, 3; exploratory laparotomy, 1; various operations for uterine displacement, 12; hysterectomies, 15; salpyngectomies, 13; removal of ovarian tumor, 2; nephrectomies, 2; castration, 1; osteotomies, 10; arthrectomies, 2; nerve anastomosis, 1; tendon transplantation, 3; amputations, 3.

In this series there were four deaths—a mortality of 2.8 per cent. The fatal cases were as follows:

(1) A man, 50 years of age, who had been suffering for somewhat more than a year from recurring attacks of partial intestinal obstruction due to a dilated redundant loop of sigmoid. An iliosigmoidostomy was done because the patient seemed in too debilitated a condition to stand a resection of the sigmoid. He stood the operation without evidence of shock and continued in good condition until the fifth day when he began hiccoughing. This kept up continuously for 24 hours, when he died. A postmortem was not obtained, so that it is impossible to state definitely the cause of death. It is safe to assume, however, that surgical shock was not a factor.

(2) A woman, 58 years of age, had been sick for five days with intestinal obstruction. She was in poor condition at the time of operation. The obstruction was found in the lower portion of the

ileum, due to a large gallstone which completely occluded the lumen of the bowel. The patient never rallied from the operation and died about 12 hours later. Death was attributed in this case to intestinal toxemia, but it is probable that surgical shock was also a factor.

(3) A woman, 54 years of age. Years ago she suffered much from malaria. She was known to have had an enlarged spleen for about ten years. Five days before operation she fell down stairs, striking her left side against a sharp corner of the step. She suffered severe pain and considerable shock. She grew progressively worse from day to day. I saw her on the fifth day. Operation disclosed a deep rent in the convex surface of the spleen and the belly full of semiclotted and fluid blood. Splenectomy was done. The patient died of shock in a short time after operation.

(4) An emaciated man of 50 with an enlarged spleen which was diagnosed as Banti's disease. Splenectomy was done. The patient withstood the operation without any evidence of shock at all, remained in good condition for three days, when he went into a sudden collapse and died on the fourth day. Postmortem showed that death was due to acute hemorrhagic pancreatitis, starting in the tail of the pancreas, which had been caught by the clamp used in catching the vessels at the hilus of the spleen. The element of shock may be safely ruled out in this case.

Of these four fatal cases, in only two can the element of surgical shock be fairly blamed for the fatal issue. So that the morbidity actually due to shock should be placed at 1.4 per cent. Of course, it is recognized that, in a series of general surgical cases of as small a number as this, collective results in the form of percentages are not of much value. Hence, it seems to me that the impression gained from watching the course of individual cases, particularly the more serious ones, is of greater importance.

The conclusions which I have reached as a result of my experience with the procedure are that it is of distinct value in the prevention of shock. In the ordinary surgical case, which as a rule is a good risk, this effect is not very evident except in the lessening of the amount of anesthetic required. I would put the amount of ether required at about one-half. There are, however, cases always occurring which are in bad condition, bad surgical risks, and here the method is of distinct value. These may be operated on with an increased safety which will result in the saving of many lives.

The performing of a laparotomy is much facilitated by the method. The abdominal walls are so relaxed that there is little need for retractors and, as the intra-abdominal tension is obliterated, the viscera remain out of the field without the use of packs. This I have found of particular value in deep pelvic operations.

Pain in the wound immediately after operation is certainly less severe. It is the usual thing for the patient to pass the first night without requiring a hypodermic.

In regard to postoperative gas-pains I cannot see that the method has diminished either their frequency or their severity.

In the field of thyroidectomy the method has demonstraeed a peculiar usefulness. In cases of Graves' disease and goiters, accompanied by hyperthyroid symptoms, the usual postoperative hyperthyroidism can be almost entirely eliminated.

I recognize that this hyperthyroidism is not the same thing as shock, but from the nature of their causation it would seem that they must be closely related. I had been employing this method in thyroidectomies for some time before applying it to other portions of the body. I had the opportunity of reporting my results in thirty-two thyroidectomies before this society last year. I have now used the method in fifty-one cases of goiter and I may say that no amount of argument, theoretical or otherwise, could convince me that this technic is not of distinct value in preventing postoperative hyperthyroidism.

As to contraindications, it may be said that in any case where the wound is infected or likely to become infected after operation, the method should not be used, as more or less sloughing is likely to follow. Experience has also shown me that, in cases where accurate primary union of the skin is essential to the success of the operation, as in plastic operations on joints, the operative treatment of fractured bones, tendon transplantation, radical breast amputations where a gaping wound is left which must be covered by skin grafts, the procedure is contraindicated.

In conclusion, it may be said that the method often facilitates the performance of laparotomies, that postoperative suffering is considerably relieved, and in bad cases surgical shock is certainly prevented and lives are thus saved; but it must be emphasized that to get these results the various steps of the technic must be made a routine procedure.

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CONSERVATION OF VISION.*

By J. L. McCool, M. D.

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It will be impossible, in the short time allotted to me, to do more than present a brief outline of this subject. That it is worthy of our most careful consideration is shown by the following quotation from the pen of Arthur J. Sweet, an illuminating engineer:

"I estimate, from a very careful consideration of the subject and from the fullest data available, that from the time of the primitive man to the time of the application of steam to industry, the amount of work entailed on the muscular system of the eye increased in the ratio of 1 to 5; and that, from the time of the application of steam to industry to the present time, the increase in amount of work entailed on the muscular system of the eye is in the approximate ratio of 5 to 500. A realization of the seriousness of this increased demand on the muscular system of the eye may be gained by applying a similar ratio to some of the other muscular systems of the body. Suppose, for instance, our grandfathers could walk ten continuous miles without undue fatigue; would it not be ridiculous to expect the present generation to walk 1,000 miles continuously without suffering a seriously deleterious effect? Yet in both cases we are dealing with a muscular system, and the comparison is by no means an unfair one. We fail to realize the abusive degree to which we of the present generation are working the muscular system of the eye, chiefly because this system is poorly provided with pain cells and hence the muscles do not give us any pain-revolt against their abuse."

With scarcely an exception all modern labor saving devices, in so far as the eyes are concerned, are misnomers. Whereas in former times the muscles of the arms and legs were the sufferers, now the delicate intra- and extra-ocular muscles bear the brunt of the work.

Our evolution has been one sided. The material products of our brains are constantly demanding a higher development of our special senses. As a race we are meeting this demand slowly but surely. However, it is not a question of one or two generations but of many.

What is more logical then than a systematic attempt to conserve that which we possess, and by so doing lay a firm foundation upon which to increase the efficiency of our special senses. Your president, Dr. Calvin S. White, has, therefore, appointed an Oregon commission for the conservation of vision composed of the following ophthalmologists: President State Medical Society, ex-officio; Dr. F. B. Eaton, Portland; Dr. Justin M. Waugh, Hood River; Dr. J. F. Dickson, Portland; Dr. C. M. Pearse, Baker; Dr. W. L. Wood, Portland; Dr. J. J. Emmons, Medford; Dr. Ralph Fenton, Portland; Dr. George Ainslee, Portland; Dr. Joseph L. McCool, Portland, chairman.

This commission shall have the power to appoint an advisory commission which shall consist of an educator, an architect, a railroad man, a representative of the press, a lumber man, an illuminating engineer, a banker and a merchant.

The personnel of this committee is as follows: William T. Foster, educator; Folger Johnson, architect; C. H. Chapman, press; Mr. Ayer, lumberman; F. H. Murphy, illuminating engineer; A. L. Mills, banker; Ben Selling, merchant.

It shall be the duty of the commission to bring before physicians, educators, philanthropists, business men, legislators, and the public at large, in as practical manner as possible, the necessity for regarding the conservation of vision and the prevention of blindness as an extremely important movement for the public welfare and one which needs earnest, thoughtful cooperation on the part of every individual in the state. The commission shall also cooperate with the committee on conservation of vision of the council on health and public education of the American Medical Association, in their efforts to further the national movement for the conservation of vision by means of popular lectures delivered in as many of the counties of the state as practicable.

The following ophthalmologists have been invited to give these lectures in different parts of the state during the coming winter: Dr. C. M. Pearse, Baker; Dr. A. C. Seeley, Roseberg; Dr. J. J. Emmons, Medford; Dr. L. O. Clement, Grant's Pass; Dr. O. B. Gullion, Eugene; Dr. B. L. Steeves, Salem; Dr. J. M. Waugh, Hood River; Dr. H. M. Henderschott, Portland; Dr. J. W. McCollom, Portland; Dr. S. E. Wright, Portland; Dr. O. M. Babbitt, Portland; Dr. A. B. Bailey, Portland; Dr. R. B. Karkeet, Portland.

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*Read before the Thirtieth Annual Meeting of Oregon State Medical Association, Portland, September 10-11, 1914.

Preventive medicine is essentially dependent upon popular education in all matters pertaining to the health of the individual, and no phase of the subject is of more importance than the prevention of blindness and impaired vision, secondary to ophthalmia neonatorium. So long as gonorrhea is prevalent we shall have this disease to combat. The public must be taught to regard redness and swelling of the lids and a discharge from the eyes of the new-born baby as an extremely serious condition and one calliing for immediate and thorough treatment.

Trachoma is prevalent in Oregon, especially in the logging camps and Indian reservations, and it will undoubtedly become more so if the openinig of the Panama Canal brings large numbers of immigrants to our shores. These people must be taught the essentials of personal hygiene to prevent the spread of the disease.

Scarcely a day passes in which some ophthalmologist is not called upon to treat injuries to the eyes as a result of accident. Machine shops, manufacturing industries of all kinds and railroading are all prolific sources of these injuries, and in many instances if proper precautions are taken they can be avoided or reduced to a minimum. These are occupations which are regarded as hazardous and men with defective vision or with only one eye should shun work of this character.

A plan for the inspection of the eyes of all school children should be formulated for the purpose of determining the presence of defective vision, inflamed, painful eyes and reflex symptoms, as headache, vertigo, drowsiness, insomnia, nervousness, etc., and the information thus obtained should be sent, with suggestions as to the proper course to pursue, to the parents of the children for their consideration. The active support of every physician is needed to further this important phase of our subject.

A study of light in its relation to eye-strain and ocular fatigue, its proper application and adaptation to the present day needs of the public, and the proper lighting of school rooms, reading rooms, and public buildings, should be studied with architects and illuminating engineers.

For many years there has been a systematic examination of the form and color sense of railroad employes, pilots, tugboat captains and masters of vessels for the protection of life and property, and much good has resulted from this practice. Has not the time arrived when we should demand that the drivers of automobiles and motorcycles be obliged to undergo a rigid visual test, to the end that those whose vision with proper correction falls below normal be denied a license? Is it not possible that some of the accidents to pedestrians are due as frequently to defective vision as to reckless driving?

In conclusion let me refer to a subject upon which there is very considerable uncertainty in the minds of many physicians, namely, the use of cycloplegics, drugs which have the power to temporarily paralyze the ciliary muscle.

Excepting the heart, the ciliary muscle is the most active in the body. It is in more or less active contraction throughout our waking hours. By its action it can temporarily overcome a very considerable amount of farsightedness and can change farsighted into nearsighted astigmatism, which, even though corrected with a cylinder, will increase an existing eyestrain.

I have no hesitancy whatever in making the positive assertion that, excepting those cases of nearsightedness beyond a certain degree, it is impossible to obtain an accurate measurement of the refraction of the eye in any one under forty years of age without the use of a reliable cycloplegic. It is true than many refractionists can and do make a fairly close estimate of the refraction without a cycloplegic, but a close estimate is not accuracy, and accuracy is what our patients have a right to expect of us.

Eyestrain is a pathologic condition. Would it not be absurd to treat a fracture without immobilization, an infection without rest, or a severe head injury without rest and quiet? Am I drawing an unfair analogy when I say that it is equally irrational to attempt to diagnose the cause or to treat the result of a refractive error without the use of a cycloplegic.

Are there any disadvantages associated with the use of cycloplegics? Yes. The individual is unable to use his or her eyes for close work for a period ranging from thirty-six hours to ten days, depending upon the drug used. However, this fact need never cause any uneasiness, for those individuals who complain of their inability to spare the time are the very ones who profit most by the few days of enforced rest of their eyes.

Another disadvantage is the accompanying dilatation of the pupil. All cycloplegics are mydriatics and any pharmacologist who will discover a drug which will paralyze the ciliary muscle without dilating the pupil will confer a lasting benefit upon the ophthalmic profession.

One other disadvantage, and it is the one repeatedly used by the refracting opticians as an argument against the use of a cycloplegic, is the fact that occasionally they precipitate attacks of glaucoma in certain individuals predisposed to that disease. This is true; but, because ether causes an occasional unexplainable fatality, is that a sufficient reason to discontinue its use as an anesthetic?

A propaganda for the conservation of vision is directly dependent upon popular education. The day of medical mysticism has long since passed. The public looks to us for education and advice in matters pertaining to their health and well-being. From time immemorial the family physician has held a deservedly sacred place in the confidence and regard of his patients. No system of popular education can nor should supplant this prerogative, so valuable to the family and so satisfying to the physician.

Nevertheless, much good can be accomplished by community education. No movement for improving the health of the public has ever been conceived which has not been subjected to more or less unfavorable, if not vicious, attacks on the part of a certain few who cannot or will not believe there exists a body of men who still hold work well done or service rendered as their ideal.

The work of educating the people to conserve their vision must be carried on largely by ophthalmologists. That they will be subjected to criticism and accused of working for their own interests goes without saying. Unfortunately, it cannot be otherwise. We desire, therefore, the active sympathy and support of the profession and suggest that, whenever the opportunity presents itself, they explain the aims and objects of this movement and urge upon their patients and friends the importance of conserving their vision.

Glycosuria and Pituitary Disease. In concluding, there are two hypotheses pertaining to the combined conditions discussed above which have received considerable corroborative support from our statistical inquiries: (1) that the relationship existing between hyperthyroidism and pituitary glycosuria, with or without acromegaly, is a remote one, and (2) that pituitary glycosuria without acromegaly not uncommonly occurs (in 10 of our series, as against 16 in which acromegaly was also associated) contrary to the opinions of certain writers. —Anders, A. M. Jour. Med. Sc., Sept., 1914.

THE EXTENSION TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR IN REFERENCE TO ITS OCCURRENCE IN ELDERLY SUBJECTS.*

By J. A. Pettit, M. D.
PORTLAND, ORE.

Fractures of the neck of the femur most frequently occur in elderly subjects, and approximately one-third of fractures which inflict themselves upon the aged are of this type. The angular position of the neck to the shaft and its smaller size make it an especially vulnerable point to trauma. Nature has so well provided for the strength of this part of the skeleton, by a remarkable arrangement of the lamellae in the spongiosa, that fracture is rare in middle age, and in the young it is usually an epiphyseal separation rather than a true fracture of osseous structure. After fifty years senile changes set in and the process constantly diminishes the resistance of this part as well as elsewhere in the body. von Bergmann terms the process senile osteoporosis. Time-honored teaching has frowned on the possibility of bony union in the presence of such senile osseous conditions and recommends the treatment of reconciliation to fate, or some inffectual treatment directed chiefly to the comfort of the patient.

However, we cannot reconcile ourselves to the fact that this class of cases should go with a half-hearted or inefficient treatment because, in the first place, the subsequent deformity and disability, with or without pain, will tend to shorten life; and, in the second place, by a proper reduction and subsequent treatment, the majority of these cases can be made to show a bony union and functional result, without any great increased danger to life by reason of the treatment, all that the old-time teachings say to the contrary notwithstanding. To simply lay a so-called impacted fracture on the bed surrounded by sand bags invites a dissolution of the much-coveted impaction. To treat such a fracture with a simple vertical or longtitudinal extension seldom accomplishes any purpose, will not reduce the fracture or, if the fracture be properly reduced, this vertical extension will not maintain the reduction. If, however, a fracture does occur in the young, it may be successfully handled by the Whitman plaster of paris method, with the leg in extreme abduction. Whitman is truly a plaster of paris artist, and when he can attain certain results by plaster of paris methods it does not mean that others can do the same.

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*Abstract of paper read before Northern Idaho District Medical Society, Apr., 1914.

The problem presented in elderly people is entirely different. The weight as well as the confinement of an extensive plaster of paris appliance is no mean burden to impose upon those in whom vitality has been reduced to the strength of a thread. There is, however, a simple, comfortable and efficient extension treatment of this class of fractures which will give a very high percentage of good results. This form of treatment was first brought out by Maxwell, and further elaborated by Ruth. These gentlemen have reported scores of successful cases. Dr. J. E. Moore, of Minneapolis, and several other surgeons have also reported similar good results, in a smaller number of cases.

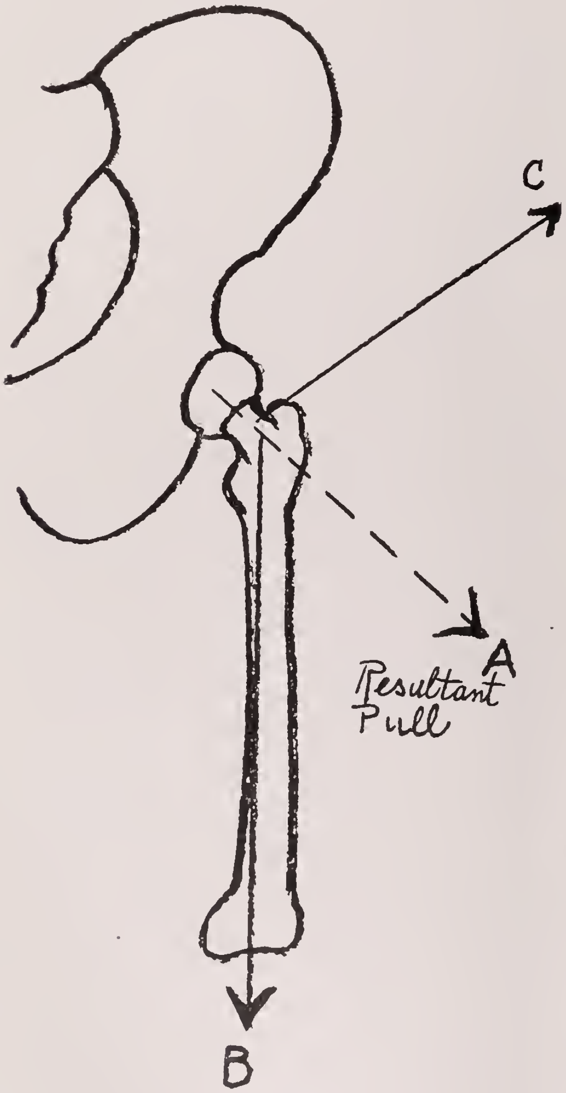

Fig. 1.

It is the purpose of this paper to further elaborate and report some successful cases, with a certain modification of the appliance as used. With the details of this extension treatment properly carried out, preceded by a proper reduction, it gives a uniformity of good results, which are always viewed with skepticism by those unfamiliar with the details of the method and its results. It can be truthfully said that criticism of this method of treatment can be traced back largely to a lack of familiarity with the application and its merits. In our service we have modified it to this extent, that, instead of using the ordinary Buck's extension in connection with the lateral extension, we have used the Hodgen splint which fulfills the same requirements so far as extension in the long axes of the bone is concerned, and at the same time adds to the comfort of the patient, which is particularly important in elderly subjects.

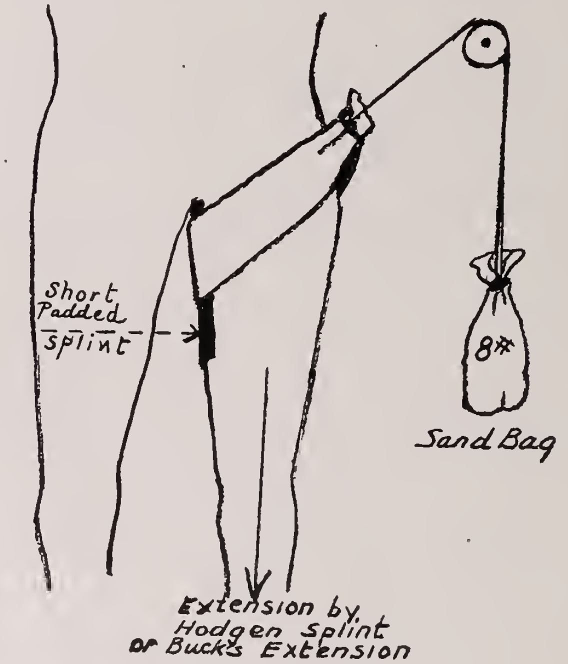

Fig. 2.

By reference to figs. 1 and 2, the work of this double extension can be better illustrated than in words, wherein is shown the extension in the true line of the neck of the femur, secured by the double pull, which is the direction required to maintain apposition in this fracture. By the extension in this correct direction the capsular ligament serves as a circular splint to the fractured portion of the bone, holding the head, so to speak,

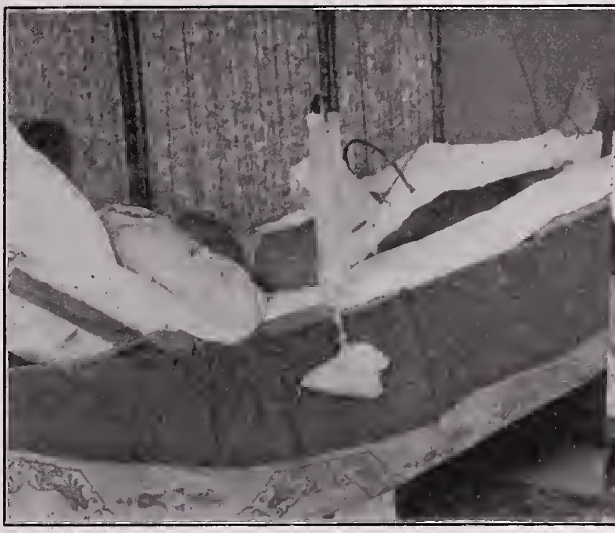

Fig. 3.

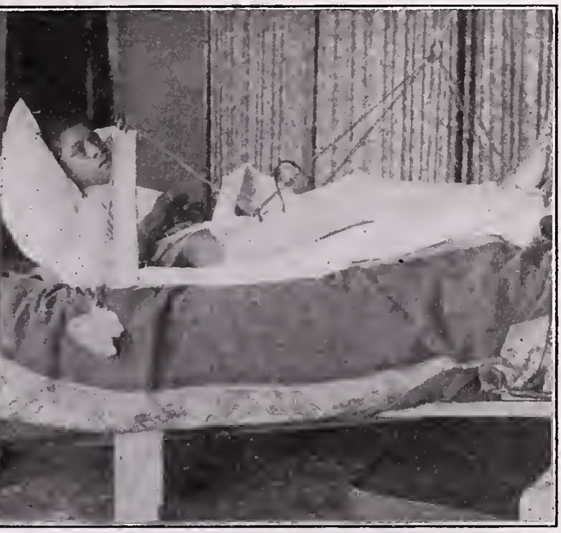

Fig. 4.

snugly in position and at the same time producing separation of the articulating surfaces, which is always of considerable advantage in intracapsular fractures.

One point of paramount importance in the treatment of this fracture is a proper reduction. When this fracture occurs, we have an external rotation of the entire limb. This is brought about largely by the action of the psoas-magnus and iliacus muscles on their attachment to the lesser trochanter, and partly due to the femur dropping backward by its own weight. This external rotation throws the distal fragment of the neck of the femur forward and thereby crowds against the capsular ligament, or else causes it to even penetrate the latter. These two muscles then impinge themselves upon the capsular ligament proximal to the distal fragment, and thereby interpose themselves with a covering of the capsular ligament between the two fragments of bone. With this condition existing, it would be impossible to get a bony union without overcoming such an interposition. The reduction can be accomplished under the preliminary stage of anesthesia by putting the femur in a position of extreme flexion upon the pelvis, which relaxes the psoas and iliacus and their interposition, making a strong lateral pull upon the upper end of the femur, which pull places the fragments in alignment and, while maintaining this lateral pull, extends the femur again. All appliances must be gotten ready to put on before this reduction is made, because this lateral and upward pull should be maintained in order to prevent a redisplacement.

Figs. 3 and 4 are photographs typical of the details of this appliance. Without burdening the reader with the details of the application, reference is briefly made to these points: First, the combined lateral and upward pull of a broad band on a well-padded internal splint, said band having in it a spreader which prevents any undue constriction of the vessels of the thigh. The upward pull tends to sustain the weight of the upper end of the femur; second, the Hodgen splint suspending the entire limb free from the bed and producing the proper amount of longitudinal or vertical extension; and, third, the foot of the bed elevated and the side of the bed corresponding to the injured leg having a slight additional elevation. This is done so that the body weight will provide a counter-extension.

The advantages derived from this appliance are, first, the patient can lie flat or sit up at any desired angle; second, the patient can shift position from side to side, because the Hodgen splint swings free from the bed and the lateral pull works over a pulley; and, third, by the use of a ring suspended from the ceiling, with the assistance of the sound limb, the patient can shift himself either for comfort or for nature's needs.

Reference is made to Figs. 5 to 7, showing photographs of four cases of intracapsular fractures of the neck of the femur; ages, respectively, eighty-four, seventy-seven, sixty-three and seventy-six years. These four cases were treated by this method, preceded by a proper reduction, and the photographs should demonstrate to the reader that a functional result was obtained.

In conclusion, upon the evidence of many others as well as the writer who have had experience in this method of treatment, it should be conceded by the skeptical, who possibly have not used it, that the fracture during the process of repair and will the proper application of this method, preceded by proper reduction, will maintain an apposition of give a very limited percentage of failures. The single or one-way vertical or longitudinal extension, whether preceded by proper reduction or not, is a treatment that should not be given consideration.

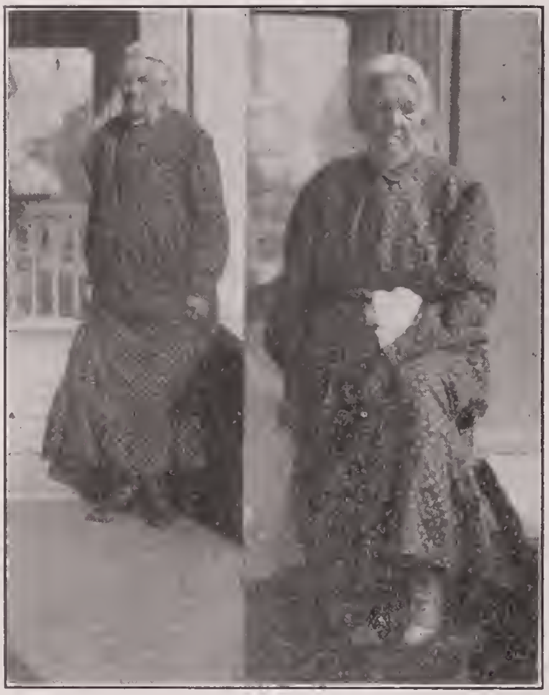
Fig. 5.

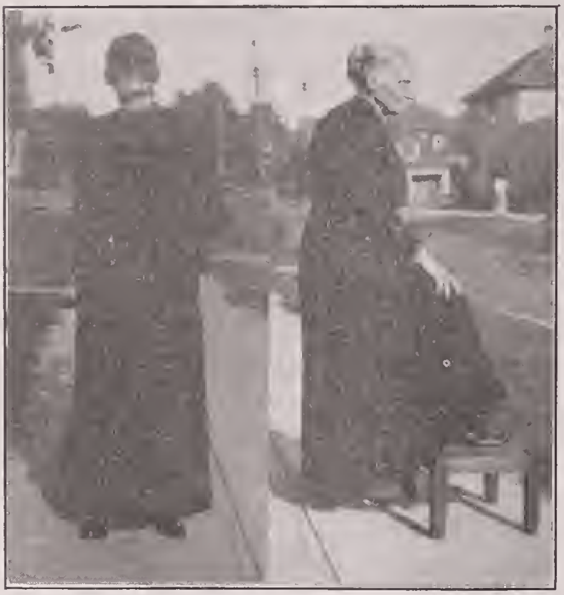
Fig. 6.

The so-called impacted fractures should not be sand-bagged. No better method could be devised to destroy a valuable impaction than to anchor the extremity with sandbags while the body of necessity must move occasionally, if only to a slight degree. Would it not be better, if the position be good, to consider this fracture reduced and apply some rational dressing?

While the Whitman treatment, especially when applied by the hand of the master, will assure and maintain as good an apposition and offer as favorable a prognosis for bony union as any other, it has the disadvantage in elderly subjects in that it adds the burden of a heavy cast, limits motion in a general way, and does not permit of sitting posture. While head of bed is elevated it is not a perfect substitute for the sitting posture.

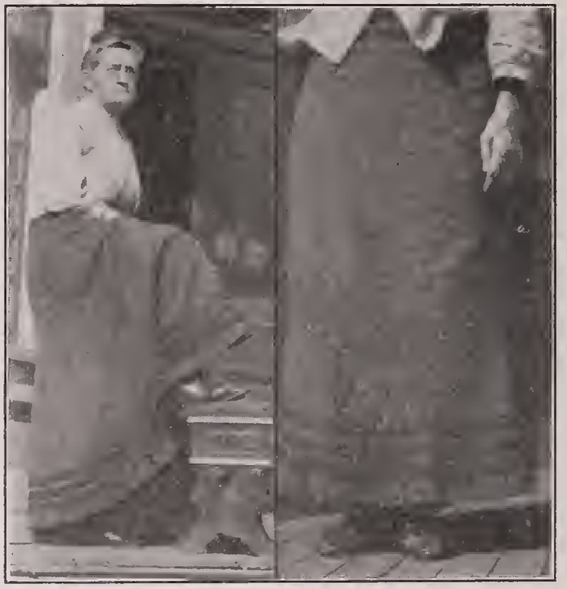
Fig. 7.

Furthermore, it is the wish of this paper to emphasize the advantage to be derived from the use of the Hodgen splint instead of Buck's extension in the treatment of this injury in elderly people, in that it affords them greater freedom of motion and a greater degree of comfort, which is an important element to be considered in these cases.

APPENDICITIS IN EARLY CHILDHOOD.*

By John B. Manning, M. D.
SEATTLE, WASH.

I do not come here to tell you how to diagnose appendicitis in infancy and early childhood, because I have seen just enough of this condition to be conscious of the fact that I have much to learn about its recognition. You might wonder at first instance why this should be a matter for the pediatrician to be discussing under any circumstances. I think you will grant that the man in general practice, or the children's man, is the one who sees these children in most instances from the onset of the illness, who is, therefore, in the best position to observe the process and to protect the child's life by calling in the appropriate assistance.

I am considering very early childhood and the four cases reported here are all three years of age or younger. That at this very early age this condition is rare is readily granted, and that the diagnosis is usually much more obscure than in older children is also, I think, readily granted. This lack of clear-cut symptomatology is not only felt by the medical man alone, but I have observed that our most skillful surgeons share the reluctancy to reach a positive diagnosis at once. I feel, therefore, we all may at least be stimulated to bear in mind this condition in considering appendicitis as a diagnosis at any age in a child.

Before proceeding to the consideration of these case reports, a few words concerning some of the points, as frequency, mortality, etiology, diagnosis, from the recent literature seem desirable.

Frequency. Comby[1], the great Paris pediatrician, in a review of 139 cases of chronic appendicitis, says this condition is much commoner than is generally recognized. Collinson[2] states that appendicitis is the commonest and most important surgical disease of the abdomen met in childhood, with the largest number of cases occurring over five years of age. Simpson[3] called attention to the increased frequency with which this condition has appeared at the Liverpool Infirmary for children in recent years. Wade[4] considers mild cases are often overlooked and that the disease is commoner than is generally supposed. Our own Deaver[5], in a remarkably complete article on this subject, with 500 case reports, says that appendicitis in childhood, characterized as it is by a subtle and insidious onset, rapid progress and obscurity of symptoms, is a disease of the most profound importance, and it well merits more attention and study than has hitherto been bestowed on it. Likewise Werner[6], Marvel[7] and many others are of the same opinion regarding its frequency, although all admit it is much rarer under five years of age.

Mortality; Prognosis. While the mortality depends to a large extent upon when the child comes under observation, and is constantly being reduced as early operations are becoming increasingly more frequent, nevertheless the mortality is apparently excessively high where a large series of cases are considered. It must be remembered, however, that, where large series are consulted, probably many or all of these are hospital cases from homes where the intelligence and care are such as to neglect all medical attention until the process has progressed for days. Salzer[8], in 163 operated cases, reported a mortality of 13 per cent. Stiven[9], in 208 cases between 2 and 7 years, gave 41.8 per cent. ending fatally. Mitchell[10], in 40 cases in which the disease had extended in an unmistakable manner beyond the confines of the peritoneal covering of the appendix, resulting in gangrene or perforation, with varying degrees of peritonitis or pus formation—when we would naturally expect an excessive mortality, lost one out of four.

On the other hand, Fowler[11], in 100 operative cases under twelve years of age, has but a 3 per cent mortality, with but one death in the last fifty-six cases. Deaver, in discussing this point, remarks that the prognosis of acute appendicitis in childhood is favorable if the appendix be removed early. If the patient be operated upon in twenty-four hours, the mortality is nil. Beyond this time, in suppurative cases, the mortality rapidly rises, and often the third of fourth day is nearly as unfavorable as it was favorable in the early stage.

That appendicitis may occur at any age is indicated by Dixon's[12] case. At 24 days, in a baby premature at eight months, a gangrenous appendix was found. And other isolated cases have been reported during early infancy.

Anatomy. Salzer[13] states that the peculiarities of appendicitis in childhood are based on special anatomic conditions. The appendix is relatively larger than in the adult, with the opening from the cecum into the appendix of funnel shape. He, however, does not think these facts have anything to do with the gravity of the condition in childhood or its difficulty of diagnosis. Fairbanks[14] makes the same point regarding the anatomy, commenting that it is easier on this account for foreign matter to enter into the appendix than in adults. Marvel comments on the position of the colon being high, with the appendix hanging, favors it more than in the adult, being a receptacle for its contents.

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*Read before the Snohomish County Medical Society, Snohomish, Wash., September 1, 1914.

Etiology. In some sources, primarily in the literature of English writers, and by Cecil and Buckley in this country, is the oxyuris vermicularis regarded with much suspicion as a cause of appendicitis in childhood. Lett[15] remarks that Still, of London, in 200 postmortems in children found threadworms in thirty-eight children under 12 years, in twenty-five of whom they were found in the appendix. They may be present without giving rise to any symptoms or they may produce an inflammation of this structure. Cecil and Buckley[16] are the especial advocates of this as the etiology of appendicitis in childhood in America, asserting that 17 per cent. of the cases of appendicitis under their care showed oxyuris or trichocephalus. In a subsequent paper Cecil and Buckley[17] even go so far as to assert that there is a definite and characteristic form of appendicitis caused by worms. Deaver, in his report of 500 cases, says worms may be described in a causative role when in large numbers they block the lumen of the appendix, cause colic and injure the mucosa superficially by trauma. The exciting cause, however, is usually, he asserts, the bacillus coli communis which is ever apt to invade the walls of the appendix through a portion of the mucous membrane made vulnerable by the predisposing cause.

CASE REPORTS.

Case 1. Clarice, age 3 years, first came under my observation in October, 1911, with the history of a badly coated tongue, fretfulness, eating and sleeping poorly all summer. Constipation was marked. Occasionally she went twenty-four hours without a movement. The examination I made at this time was negative. The note made on the abdomen was abdomen soft and full. She was given tr. nux vomica drops 2, three times a day, sodium phosphate ½ teaspoonful each morning and a diet.

On Jan. 24, 1912, the mother called up from the Puget Sound Navy Yard, where the father was stationed, saying the girl had been running a slight temperature for about six days, about each second day with a "kind of a chill," no nausea. On Jan. 25 I went over to the yard, and there found her lying asleep, with easy breathing and pale color. On waking, hearing was rather poor and she acted very fussy. There was no retraction of head, no rigidity of neck. The tongue was thickly coated; the throat was injected; photophobia was present; the chest and heart were normal. There was a questionable rose-spot in the axilla. Abdomen slightly distended. My notes say, "Voluntarily held rigid, fussy, no true spasm. Liver palpable, one finger's breadth below costal margin. Spleen not palpable. No definite tenderness made out in abdomen. Extremities—all can be moved freely. Knee jerk obtained. No Kernig. White count 9,600. Urine: no sugar; sediment, few leucocytes and squamous epithelial cells; no motile bacilli. Blood smear; no malarial plasmodia. Differential count—polynuclear leucocytes 77 per cent. Lymphocytes; large, 3 per cent; small, 17 per cent. Widal negative. Stools yellow, smooth but constipated.

From Jan. 25 to Feb. 3 she ran every day or two a temperature which would reach 103°, usually at night, and each day she sat up in bed, playing with paper dolls. A second Widal was negative. She was brought into the city for close observation on Feb. 3, when another Widal was negative. The white count now was 9,000. The cutaneous tuberculin reaction was negative. Drs. S. V. R. Hooker and C. W. Sharples were seeing her daily at this time. On Feb. 7 three teaspoonsful of aromatic cascara were given, from which two large, loose but formed movements resulted, simultaneously distension increased, spasm and tenderness appeared definitely for the first time; the white count jumped to 17,000; the differential showed a sudden rise in percentage of polynuclears, 82 per cent., 10 per cent. lymphocytes, 3 per cent large, 3 per cent transitional.

An exploratory operation was now considered necessary. Operation by Drs. Sharples and Hooker. A catarrhal appendix was removed and immediately a normal convalescence was begun. She has been perfectly well since.

Case 2. Marion, aged 3½ years, the daughter of a physician, I first saw at 13 months, in consultation with Dr. H. A. Shaw, in a severe gastrointestinal infection with marked toxemia, from which she convalesced slowly. She developed into a splendidly nourished and healthy appearing child.

On Oct. 9, 1913, I was called in consultation by the father, when I found the child complaining of pain in the head and right leg, sleeping a great deal and vomiting everything, even water; stools were yellowish, contained no curds, no mucus. The temperature was 99°. The throat was negative, the chest clear. The abdomen was slightly distended. The stomach was washed out. The white count was 7,400. Urine acid, no acetone, no albumen, no sugar. On Oct 11, at noon temperature was 100°, the white count 11,400. Abdomen distended, tympanitic, no masses, no tenderness. Urine—occasional hyalin and fine granular casts. She was now keeping down a little nourishment. Oct. 12, white count 10,000, no vomiting for twenty-four hours. From this disturbance she made a rapid convalescence.

March 1 I again saw her with a temperature of 103.4°, respiration 35, pulse 140, vomiting for 24 hours, with a slight amount of spasm in the right lower quadrant of the abdomen and considerable abdominal distension. The chest, ears, throat, urine and hips were negative. She had complained for one week that the right leg hurt her and it was slightly flexed at the examination. The white count was 17,000, differential 87 per cent. polynuclears. At 10 P. M. the temperature was 102.8°. She was still vomiting, the abdomen was distended, there was slight spasm of the right lower quadrant.

Those in consultation agreed that an exploratory operation was advisable. Dr. Shaw removed a slightly inflamed catarrhal appendix. She made a rapid convalescence and is perfectly well.

Case 3. Baby F., 1 year old, was seen in consultation with Dr. C. B. Boudwin, with the following history: Full term baby, born in an instrumental labor, but in good condition, with birth weight of about eleven pounds. Breast-fed for fourteen days, when, on account of a milk leg and a high fever developing in the mother, suckling was stopped. The baby was perfectly well until this illness, ten days ago, started with fussiness and being easily tired. For one day at this time fever was high. There was no vomiting. The movements were mostly constipated, yellowish and undigested. During the last few days he has had a little fever, lying mostly curled up on his right side, but has appeared bright until today; now acts real stupid.

Physical examination. Movement was partially formed, pasty, and contained numerous large and small curds. The infant was pale, breathing easily, lying curled upon the right side. There was no rigidity of the neck; no retraction; mental condition clear; throat normal; chest normal. The abdomen was moderately distended, markedly rigid, with marked tenderness localized in the right lower quadrant.

This case was the only one of the four which clearly presented at first examination anything like the customary group of symptoms. Operation was immediately advised and Dr. Boudwin found a large appendicular abscess which was drained and the child made a fine convalescence.

Case 4. Richard, aged 2½ years, the son of a physician, was first seen by me in Oct. 1913, when for about two weeks he had follicular tonsilitis with an otitis media of the right ear. During this time he ran a temperature from 100 to 103½°, with a white count of about 13,000, and what might be called a very mild, acute nephritis. His convalescence was slow and mucus persisted in the stool for several days. Since then he has been well, with an occasional, slight gastrointestinal upset, at which time, lasting for a day or two, he complained of the right leg.

On Aug. 8 I was asked to see him again, with the history that one week ago he vomited with the diarrhea, and temperature of about 100°. He was thoroughly cleaned out, starved for twenty-four hours, started on gruels, and was up and about, progressing well until two days ago, when he suddenly complained of pain in the abdomen, with some distension. There was no vomiting, temperature was 102°, which continued until the time I saw him, pulse 130, respiration 40, with an expiratory grunt. There was dilatation of the alae nasi. The abdomen was distended, tympanitic. There was no localized tenderness. Over the left, lower chest in front were numerous fine rales, with no alteration in breathing. The localization of these rales, the grunting respiration, suggested a diaphragmatic pleurisy, and I even went so far as to express an opinion that the trouble was not in the abdomen. The white count at this time was 16,000, the urine was normal, the differential blood count was 79 per cent polynuclear leucocytes. At this time he was also seen by two surgeons who advised waiting.

On Aug. 19 the picture was more clearly that of appendicitis. The child was pale, somewhat septic looking; the abdomen was markedly distended, and tenderness with dullness could be localized in the right lower quadrant. The white count was 13,000, and the polynuclears 76 per. cent.

All agreed that an exploratory operation was now immediately advisable. Dr. J. B. Eagleson operated and found a perforated appendix with a walled-off abscess. He is now making a favorable convalesence.

In the consideration of a diagnosis, from my own experience I have learned to regard with suspicion cyclic vomiting, starch indigestion and obstinate constipation, as factors to be closely watched in relation to acute or chronic appendicitis in infancy and childhood. That these conditions exist without appendicitis must, of course, be readily admitted. Since my interne days on the service of Dr. John Lovett Morse, at the Boston Children's Hospital, I have seen but one case, however, of recurrent vomiting which I was willing to accept as meeting the description so extensively and unhesitatingly described in some of our newer text-books on children as cyclic vomiting. I believe with Crumston[18], that in each instance every possibility of appendicitis must be excluded in periodic vomiting. Starch indigestion, particularly the more severe types with abdominal distention and occasional elevation of temperature, such as is common when carbohydrate fermentation upsets take place, as in this condition requires close observation. I have now under my care children of both these types whom I have approached in each new upset thinking this was the time when something more definitely linked with appendicitis would present itself.

That pneumonia may be confused with appendicitis in childhood is well known. That pneumonia and appendicitis may occur simultaneously is also a fact. Daussy[19] reported four cases between 2 and 12 years, where pneumonia and appendicitis were associated. I think it was Kelley who said a pleuritic empyema may be opened before the abscess of the appendix is found at autopsy. My first case closely resembled typhoid fever.

In the cases reported here, it is apparently more than a coincidence that the first definite observation, so far as the abdomen itself was concerned, was abdominal distention in the three cases that I had an opportunity to observe more than once. A curious fact is that cases one, two and four had, preceding the attack, either soreness, pain or dragging of the right leg. The white and differential counts were no doubt of assistance but, as in most border line instances in medicine, where the laboratory findings are considered, the safest and most reliable indications for diagnostic procedure lie in the clinical findings and the condition of the child. I am absolutely convinced that the safest course to pursue is not to be too confident of one's power of estimating the exact condition of the appendix.

Concerning treatment, there is space only for the words of that great American abdominal surgeon, Deaver, that the ideal treatment will be attained when all patients are operated upon early, when the mortality will be nil.

604 Cobb Building.

BIBLIOGRAPHY.

1 Comby: Arch. de Med. des Enfant, June, 1910.
2 Collinson: Pract. Lond., 1911, 11, 61.
3 Simpson: Brit. Jour. Child. Dis. Vol. X, 401.
4 Wade: Austal. Med. Gaz., 1912, XXXI, 519.
5 Deaver: Jour. A. M. A. Vol. LV, No. 26, 2198.
6 Werner: Jour. Lancet, Minn., XXXIII, No 8, 231.
7 Marvel: Arch. of Pediat, XXXIX, 367.
8 Salzer: Gazz. Med. Ital, 1911, LXII, 355. Abs. Brit. Jour. Child Dis., Lond., Vol IX, 235.
9 Stiven: Pract., London. LXXXIX, 527.
10 Mitchell: Brit. Jour. Child Dis. Vol. IX, 355.
11 Fowler: Jour. Dis. Child, IV, 97.
12 Dixon: Ann. Surg., XIVII, 57.
13 Salzer: Ibid.
14 Fairbanks: Med. Press and Circular, June 26, 1912, 664.
15 Lett: Pract. Lond., May, 1914.
16 Cecil and Buckley: Med. Record, N. Y., 1911, I, 1162.
17 Cecil and Buckley: Am. Jour. Med. Sc., 1912, I, 793.
18 Crumston: Am. Jour. Obst., Vol. LIX, 346.
19 Daussy: These de Paris, 1912.
I, 793.

DIAGNOSIS IN THE EARLY STAGES OF URINARY TUBERCULOSIS.*

By George S. Whiteside, M. D.

PORTLAND, ORE.

I wish to speak especially about early forms of urinary tuberculosis and the symptomatology of this stage of the infection. The earliest symptom noticed by the patient is usually frequency of urination, this being true both in men and women. There may also be a slight ache or tenderness over one kidney but this is not so frequently present. On account of the frequency the patient applies to the doctor, usually to the family physician. If he be busy with other apparently more important cases, he often gives some diuretic medicine which relieves the frequency by diluting the urine. If he give urotropin, as is so often done, in most cases the vesical irritation becomes increased and the frequency more annoying.

I believe it is important for the family physician to examine every female patient who complains of frequency to detect, if possible, any urethral irritation, and to examine carefully with the microscope a sedimented specimen of the urine. Where tuberculosis is at the bottom of the trouble, pus will always be found. Of course pus is present in many other vesical and urethral conditions, so that finding it should not be taken to indicate tuberculosis but, where pus is present, the case demands more thorough investigation.

A very frequent source of trouble is the presence of gonorrhea. An uncured chronic gonorrheal urethritis produces pus and often leads the doctor to think that this is the sole source and the only cause of irritation of the bladder neck and urethra. In such circumstances a diagnosis of an incipient tuberculosis is often masked and delayed for many months.

Tuberculosis practically always begins in the urinary tract as an unilateral infection of the kidney. If either kidney be movable to a sufficient extent to impair free drainage from the kidney, that side will be found most susceptible to tuberculous infection, borne on the blood or lymph stream. There seems to be no such thing as primary tuberculosis of the bladder.

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*Read before the Thirtieth Annual Meeting of Oregon State Medical Association, Portland, Ore., Sept. 10-11, 1914.

Remember that most cases appeal to the general practitioner and, if he wastes their time and his effort in useless bladder washing, he is surely allowing the best time for cure to slip by. Where frequency of urination is complained of and pus is present in the urine, do not give urotropin and do not wash out the bladder unless you are sure the condition is not tuberculous.

By records of a large number of all sorts of urinary cases, exclusive of venereal disease, it has been proved that 6 per cent. of the entire number are cases of tuberculosis of the kidney. Of these 82 per cent. showed tubercle bacilli in the urine. Some of these had few bladder symptoms. A few had fever of the hectic type. Sometimes pain, beginning over the kidney, radiated along the ureter. It was often paroxysmal and simulated the pain of renal stone. This similarity is worthy of especial notice in view of the fact that many times, when a stone is suspected from the symptoms, a radiograph is taken. When no stone is shown on the plate the diagnosis of the case is not complete without ureteral catheter tests to prove the presence or absence of tuberculosis.

Where frequency of micturition is present, pain and tenesmus are also frequent symptoms. In men the pain is often referred to the end of the penis. Sometimes at the end of micturition a drop of blood is squeezed out. Abundant hematuria is more characteristic of tumor of the kidney or bladder or sometimes, in advanced tuberculous cases, of ulcer of the bladder.

When the bladder is examined with the cystoscope, the orifice of the ureter from the early tuberculosis kidney is apt to stand open or be obstructed by edematous mucous membrane. In late cases a bladder ulcer often covers the site of the ureteral orifice. Everywhere in the bladder hyperemia is the rule. Usually this appearance is more marked on the most diseased side. Ureteral catheterization and estimation of the functional activity of each kidney separately is absolutely essential to safeguard the patient in preparation for nephrectomy.

Medical treatment or cures at sanatoria by means of good hygiene, mineral water internally and externally, forced feeding, high altitude and by tuberculin have all been tried with some measure of success in a small number of cases. No residence at such a sanatorium is of much value to the tuberculous patient short of three months. If it proves to apparently arrest the disease, the cure should be repeated every year for four or five years. If during this time symptoms of toxemia or increased pain and urinary difficulty point to progressive activity of the disease, radical surgery should be undertaken at once.

What changes are usual in the secretion of the sound kidney on the opposite side to the tuberculous one? A slight degree of nephritis is not uncommon. The urine, taken for twenty-four hours, is ordinarily somewhat diminished, rarely considerably increased, usually pale in color and cloudy. Albuminuria is quite constant. Casts are not often found. In the few cases when they are present they are either hyaline or fine granular in appearance. Often, owing to compensatory hypertrophy, the sound kidney is the larger. Therefore, do not make the common mistake of supposing an enlargement is necessary in a diseased kidney.

Sometimes renal calculi occur simultaneously with tuberculosis. They may precede it but usually the infection was the inciting cause of pus formation and pus cells or clumps of bacteria the nucleus of the stone. Often such stones quickly destroy the kidney, converting it into a sac full of pus and calculi. Sometimes such a kidney may become entirely occluded from the urinary tract by closure of the ureter due to disease.

The picture of renal tuberculosis varies at different stages and under different anatomic conditions and also because of the advancement of disease. It is very much more common than is generally supposed. Diagnosis is of first importance. If the family doctor will remember these things and recognize the cases early, much loss of life and suffering can be prevented.

907 Journal Building.

Röntgen Diagnosis of Duodenal Ulcer. A normal duodenum can always be shown if proper technique and proper bismuth mixtures are used. The demonstration of a normal duodenum, even on a single plate, rules out the presence of indurated or surgical ulcer. Duodenal ulcers show a characteristic deformity, due to connective tissue, with often a stream of bismuth seen entering the mucosal defect. —George and Gerber, Surg., Gynecol. and Obst., Sept., 1914.

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EDITORIAL

LAST MONTH'S PORTLAND MEETING.

The annual meeting of the Oregon Medical Association held at Portland last month proved to be one of those successful and interesting gatherings of physicians for which Portland is famous. There was a good representation from Oregon with a few visitors from other states, all of whom were delighted with the cordiality extended by the Portland physicians. The program presented a few unusual features which have not appeared in former years. One noticeable fact was the absence of outside talent, the papers being presented exclusively by members of the association. In connection with the meetings of our Western medical societies we have developed the belief that for a successful gathering the presence of one or more noted men from the East is essential. While such aids are very delightful and important, yet it has been demonstrated on more than one occasion that the members themselves are qualified to present papers of such a character as to make a meeting of value and profit. The second interesting feature of the meeting, common to others of our Western associations in recent years, was the limited number of papers on the program. At each session from two to four papers were read. There was thus sufficient time to permit discussion by every one who wished to speak on each paper. It is believed that this thorough digestion of a few selected topics is of more value than the hurried consideration of many papers, some of which are even read by title, with little or no discussion. The President, Dr. Calvin S. White, was an ideal presiding officer, carrying out the features of the program with celerity and dispatch. He permitted no idle moments and everything was accomplished according to schedule. The meeting was held in the new Deutsches Haus, of the German Turnverein, a commodious and well appointed institution, which was the headquarters for all features of the meeting. The only gathering elsewhere was the banquet, given by the City and County Society to the members and visitors of the association, which was held at the Multnomah hotel. Some genius of the Committee on Arrangements prepared an entirely new feature, which caused much entertainment and amusement. Each speaker, as he began his response to a toast, was greeted by beholding his own likeness thrown on a screen, accompanied by certain well known characteristics or idiosyncrasies, all of which served to add to the enjoyment and delight of the occasion. The Portland profession is to be congratulated on the successful termination of another annual meeting which will long be remembered by all who were fortunate enough to attend.

THE WASHINGTON MEETING AT NORTH YAKIMA.

The annual meeting of the Washington association, which was held at North Yakima from the 21st to the 23rd of last month, afforded the profession of the state the first opportunity for many years of assembling in the famous fruit region of central Washington. Being distant from the large cities, the attendance was naturally smaller than would have been expected in one of the Sound cities or in Spokane. About one hundred were present, including four from Portland. The program was abbreviated in accordance with the policy adopted for future meetings, so that the papers might all have the opportunity of being presented and discussed to the desired extent. While a variety of subjects were considered, that which probably covered the widest range of interest was in the afternoon of the last day, consisting of a symposium on industrial insurance. It was discussed from the standpoint of the general public, the employer, the employee and the attending physician. This subject is opportune for present discussion since some form of legislation will probably be adopted at the next session of the legislature, dealing with the matter of first aid in the hope of adjusting the existing dissatisfaction on the part of the medical profession.

The meeting was scheduled at this time in order to coincide with the annual state fair. While it is commendable to provide as varied an entertainment as possible on such occasions, it is questionable whether it is not more satisfactory to hold these medical meetings at a time free from other attractions. Although a comparatively abbreviated program was arranged for this meeting, it was necessary to rush it through on several occasions in order to get time for outside attractions in no way connected with the medical meeting. This is not intended as a criticism of the courtesy and hospitality of the Yakima profession which was extended so warmly and cordially to all visitors. The state fair is an event well worth a visit to Yakima on the part of all citizens, which everyone should patronize in order to realize how great are the agricultural and horticultural developments of our state. The social functions of the meeting were Dr. Lynch's president's reception and the Governor's ball. The latter was a brilliant affair which furnished great delight to many of the visitors and the ladies. To those unfamiliar with the fruit culture in the Yakima Valley the automobile rides were a revelation. The huge masses of ripe fruit were indication of the present and future wealth of these irrigated valleys. This meeting will be remembered with pleasure and delight by all in attendance.

THE IDAHO STATE MEETING AT BOISE.

The twenty-second annual meeting of the Idaho State Medical Association was held at Boise the 8th and 9th of this month. The attached program shows that papers of a valuable and interesting character were presented and that it was representative of the physicians of Idaho and Oregon. We regret that the program reached us too late to publish in our September issue, in time for circulation before the date of meeting.

Preliminary Program.
Thursday, First Day,
9:30 A. M.

Called to order by the president, Dr. W. F. Mitchell, Blackfoot.

Report chairman committee on arrangements, Dr. M. H. Tallman, Boise.

Reports of standing and special committees.

Annual report of secretary-treasurer.

Unfinished business.

President's address, "Medical Jurisprudence," Dr. W. F. Mitchell.

Address, "Value of Drug Inspection," J. H. Wallis, State Dairy, Food and Sanitary Inspector, Boise.

"The Future of European Clinics," Dr. F. H. Brandt, Boise.

2 P. M.

"Syphilis in the Role of Malignant Neoplasm," Dr. J. Chris O'Day, Portland, Ore.

"The Constitutional Factor in Surgery," Dr. Charles P. Noble, Boise.

"Present Conception of Surgery of the Neck," Dr. Thomas M. Joyce, Portland, Ore.

"Crushing Injuries," Dr. W. A. Wright, Pocatello.

"Differential Diagnosis of Appendicitis, Gastroenteritis and Typhoid," Dr. Ray H. Fisher, Rigby.

"The Present Status of Prostatectomy Technic," Dr. J. A. Pettit, Portland, Ore.

Friday, Second Day,
9:30 A. M.

Selection of committee on nominations.

Address, "Some Interesting Phases of Medical Practice in Asiatic Turkey," Dr. A. R. Hoover, Cesarea, Turkey.

Report of Cases of Trachoma Treated with Bacillus Lactis Bulgaricus, Dr. C. R. Hudgel, Boise.

Report of a Case of Parinaud's Conjunctivitis, Dr. S. B. Dudley, Weiser.

Paper (subject not announced), Dr. Joseph Clothier, Pocatello.

Report of a Case of Syphilis of Internal and Middle Ear, Dr. Ed E. Maxey, Boise.

"Infant Feeding in Interstitial Disorders, Dr. J. N. Davis, Kimberly.

"Graphic Studies in Cardiac Arrhythmia-Ectopic Systole," Dr. M. H. Tallman, Boise.

2 P. M.

Report of committee on nominations.

Election of officers.

"Childhood, the Time of Primary Infection in Tuberculosis," Dr. E. A. Pierce, Portland, Ore.

"Report of Tubercular Cases Treated by Me with Friedmann Vaccine," Dr. M. McKinnon, Sandpoint.

"The Two-Stage Operation for the Treatment of Cancer of the Rectum," Dr. R. C. Coffey, Portland, Ore.

"Treatment of Goitre," Dr. Andrew C. Smith, Portland, Ore.

Paper (subject unannounced), Dr. J. L. Stewart, Boise.

Unfinished business.

Adjournment.

THE WASHINGTON MEDICAL DEFENSE DEPARTMENT.

While it is well known that malpractice suits have enormously multiplied of late years in the state of Washington, the real condition is not realized except by those who have come in contact with their defense. The fact is that during the past year more cases have been brought in this state than in any of the twenty-one states containing a medical defense department. In the year 1913, one hundred and fourteen malpractice cases were filed in this state, while about ninety authentic cases have already appeared this year. The results obtained through the agency of the Medical Defense Department of the state association have demonstrated its superiority in defense of the physicians of the association over anything that has been accomplished by private companies. While the great state of Texas in the past two years defended seventeen malpractice suits, the Washington association has handled thirty-two cases in the eleven months of its existence. Four cases were won in the superior courts while one has been appealed to the supreme court. Twelve are in the process of settlement, some of which will be adjusted without suit. Fifteen have been disposed of without trial, though suits were filed. At the same time the department has had the good fortune not to lose a case.

The small cost of defending these cases practically eliminates competition of private companies, due to the fact that members of the association voluteer their services, while the private company must pay for expert testimony, together with the refusal of members to testify against each other. These facts are so well known among the private companies that a number of suits taken by them have been turned over to the state association to be defended by the latter's attorney, a portion of the expenses being paid by the private companies. Light is thrown on this feature of the situation by the fact that one large private company during the past year collected $2,800 in fees and spent $8,700 in defense, as a result of which the company suspended business in the state. Private defense companies have found business so burdensome in the past two years that seven have ceased writing policies. In contrast to these facts the expense of the medical defense department is most gratifying. Its membership has numbered five hundred and seventy-two, each of whom contributed $5 to the fund. While the private companies as a rule lost money, the medical defense department defended more cases than any two companies combined and has on hand a surplus of $621.

In discussing medical defense at the state association meeting at North Yakima last month, the opinion prevailed that, while the association has been remarkably fortunate in obtaining such an extraordinary financial result for conducting so large a business, yet the margin is too small for the safe protection of the members and security depends on increasing the annual dues. It was, therefore, voted by the association that during the next year the membership fee shall be increased from $5 to $10. It is believed that, instead of having a surplus of $600, this should be increased to several thousand as a sheet anchor in case of emergencies. It was the belief that, if another year's experience shows this amount is not needed, the fee can be reduced in following years. Considering the secure defense which the association has obtained during the past year, compared with the uncertainty of the private companies, it is believed the present members of the defense department will willingly pay the increased annual fee and that the membership will be very greatly enlarged during the coming year.

AN EFFECTIVE MEANS OF SUPPRESSING THE QUACK.

A constant warfare is being waged in all the states against the unlicensed practitioner and the shameless quack who preys upon the ignorance of the public. It is often impossible to suppress such parasites through the agency of the state laws, owing to an ingenious method of defense or a combination of accomplices that circumvents the law. One of the most unique fakers of the day has been Frank Lotz, of Vader, Washington, who has thrived for a long period in this little town of Lewis County. Although having no medical degree and not claiming to be educated in medicine, he has nevertheless enriched himself by treating deluded dupes in large numbers who have been persuaded that he possesses marvelous curative powers. The remarkable modus operandi employed by him has consisted in owning and editing a weekly newspaper, the columns of which are largely devoted to his extravagant claims of healing powers and the description of his marvelous results. He maintains that he can cure tuberculosis, syphilis, cancer and other blood diseases in from sixty to ninety minutes. The most remarkable feature of the situation is that he so instills belief in these stupendous claims that people of southern Washington and northern Oregon have followed him in sufficient numbers to enable him to maintain a large and influential bank account in his town. The Board of Medical Examiners has prosecuted him several times for practising without a license but he has with equal regularity won these suits, acting as his own attorney. This result is explained, in view of the admitted facts against him, on the ground that the courts and prosecutors of his county have been hypnotized by his persuasive personality to such an extent that his conviction has been impossible. Accordingly his case has been referred to the United States District Attorney, and he has been indicted for using the mails to defraud, through the agency of his personal weekly sheet. It would seem that escape from conviction would be impossible. We desire in this connection to call attention to the fact that prosecution for obtaining money under false pretenses or using the mails to defraud is oftentimes the most effectual means for elimination of medical impostors, whose conviction for illegal medical practice is often so difficult to obtain.

KILL INITIATIVE MEASURE NO. 9.

Among the various questions on which the citizens of Washington will vote next month is Initiative Measure No. 9 which should be defeated by an overwhelming vote. While ostensibly formulated in the interests of organized labor, a majority of the committee preparing it has no connection with the labor interests. It is not favored by employers nor employees as a body, is condemned by the physicians and not endorsed by the industrial commission. The essential feature of the measure, intended to satisfy the physician as a first aid provision, names one hundred dollars as the maximum compensation for services rendered any one workman. This shall be paid by the employer but, if the attending physician demands a larger sum, this must be paid by the industrial insurance department out of the accident fund for the class to which the injured workman belongs. In case the employer objects to the amount of the bill, it must be arbitrated by three persons, one appointed by the doctor, one by the employer and a third selected by these two. If they cannot agree upon a third, he shall be appointed by the Industrial Insurance Commission. Governor Lister has expressed himself as hostile to this measure, specifying the fact that probably a large proportion of the attending physicians will name this maximum as a fee, thus entailing endless arbitration and dissatisfaction. One defect in this measure, applying equally to the existing Industrial Insurance Act, has produced much discord and dissatisfaction. The act requires reports to be made by the attending physician. During the period of its existence a large number of reports have been received from attendants on injured workmen who were not licensed physicians. The attorney-general has upheld the commission in accepting these reports on the ground that the act does not define the meaning of attending physician and he has, therefore, justified and recognized the employment of any one with or without proper medical knowledge and equipment. In the light of this attitude the proposed initiative measure might justify the payment of a sum up to one hundred dollars to any individual assuming to possess the qualifications to treat an injured workman, even if ignorant of medical training. Governor Lister has publicly stated that, if this measure be defeated at the November election, he will appoint a commission of representatives from the employers, employees, physicians and Industrial Commission, who will prepare a bill to be presented at the next session of the legislature which will cover all the points in controversy, affecting all interests connected with industrial insurance. In view of this fact it is up to the medical profession of Washington to get busy and see that this measure is defeated at the coming election.

DR. C. J. SMITH'S GUBERNATORIAL CAMPAIGN.

A physician contending for election to the highest office in his state is an event to attract the attention of all observers. Without regard to party political affiliations, the profession of the Northwest is much interested in the campaign being conducted by Dr. C. J. Smith, of Portland, for election to the governorship of the great state of Oregon. All who know the doctor appreciate his fitness and qualifications for this office. So rarely is a physician elected to the governorship of a state that his success in a sense will reflect credit upon the whole profession. Therefore, in the name of the physicians of the Northwest, we wish him success in the election next month, with the hope that we may have the opportunity of congratulating him upon his victory, knowing that the state of Oregon will be governed by an accomplished physician, a worthy man and a good citizen.

MEDICAL NOTES

Modern Medical Offices. The most complete and up-to-date physician's offices of the Northwest are to be found in Portland. In some of the newer buildings several combinations of physicians have equipped offices with all modern appliances and facilities that will rival the equipment that can be found in any of the populous cities of the East.

Willamette Valley Medical Association. At the regular quarterly meeting of the Willamette Valley Medical Association Drs. W. H. Dale, of Harrisburg, and C. W. Newth, of Philomath, were elected delegates to the Oregon State Medical Association. About twenty-five members were in attendance and after a banquet listened to a paper on orthopedic surgery by Dr. C. R. McClure, of Portland.

Visiting Nurse Association. As a result of the campaign during the last month, the Visiting Nurse Association, of Portland, has received about $1,000. The membership has been increased by 200 and the association will be able to continue its work for the coming year.

Americans in Official Positions in Vienna. Dr. Ray W. Matson, of Portland, was in Vienna at the breaking out of the war. On account of so many physicians going to the front he was given the unusual opportunity of appointment in the Pathological Institute of that city, of which he is now in charge. Dr. F. A. Black, of Seattle, who has been studying in Vienna for the past year, owing to so many physicians being engaged in the war, has been placed in charge of a base hospital in that city.

Dr. J. P. Johnson, formerly of Ashland, has located in Grants Pass. He will attend to the practice of Dr. Bywater during the absence of the latter in the East.

Dr. Charles Ballard and H. Oftedall, of Portland, have located in Lakeview. It is reported that they intend to build a hospital in this city.

Dr. S. M. Kerron, formerly a football star of the University of Oregon, has located in Eugene.

Dr. H. M. Bouvey, formerly of Portland, has located in La Grande, where he is connected with the O.-W. Ry.

WASHINGTON.

Suppression of Illegal Practitioners. The State Board of Medical Examiners reports that since the organization of the present board 150 illegal practitioners of medicine have been forced to cease operations.

Infantile Paralysis. A small epidemic of infantile paralysis has occurred at Ferndale. The county physician reports that four cases, one of which was fatal, have been reported to him. Isolation is being used to combat the spread of the disease.

Regulation of Milk Supply. A new ordinance has been drawn up by the commissioner of health and chief milk inspector of Seattle to regulate the production and sale of milk and other dairy products. The ordinance is comprehensive and grants the health department a large measure of power in excluding dairy products which do not come up to a high standard.

Tuberculin Test for Cows. Dr. G. F. Overhulse, of the State Department of Animal Industry, has been on an extensive trip throughout the state for the purpose of tuberculin testing dairy herds. During the past month he has worked in the districts about Spokane, Everett and Yakima.

The Northern Hospital for the Insane, at Sedro-Woolley, is now one of the most modern institutions of its kind in the state. The State Board of Control has accepted from the contractor four new cottages. Six additional are to be built as required and plans are ready for a complete set of modern farm and dairy buildings. The capacity of the institution is now 700 patients.

Superintendent at Steilacoom. Dr. A. P. Calhoun, superintendent of the Western Washington Hospital for the Insane, at Steilacoom, has tendered his resignation to take effect November 1st. The Board of Control has appointed Dr. W. N. Keller, of Tacoma, to fill the vacancy.

New Superintendent at Medical Lake. The Board of Control has appointed Dr. A. S. Oliver, Jr., superintendent of the Eastern Hospital for the Insane, at Medical Lake, which position he has held temporarily during the past year.

Plague Prophylaxis. Dr. E. L. Hamilton, of the United States Health Department, has been detailed to Tacoma for the purpose of plague prophylaxis. He has asked the citizens to cooperate with him in preventative measures in order to avoid a repetition of what has occurred in New Orleans. This city was warned several years ago but disregarded the warning and as a result is now paying $60,000 a month fighting plague.

Typhoid Epidemic. Tacoma has had a small epidemic of typhoid fever, practically all the cases having been among the employes of the Milwaukee Railway who have been working on the tide flats. In all thirty-two cases have been reported.

The Seattle Obstetrical and Gynecological Society held its first formal meeting Sept. 9. Abstracts of the literature were read and freely discussed, the topic of "The Treatment of Albuminuria in Pregnancy" being especially considered.

Seattle Physicians in European War. Drs. R. V. Forbes and E. J. Stubbs, of Seattle, have offered their services as surgeons for the Canadian service. They expect to go to London this month and hope to see active service in France.

Surgeon in Servian Army. Dr. Spiro Sargentich, of Seattle, has left for Europe where he will enter the Servian army as a surgeon. He is a native of Montenegro and intensely loyal to his native land.

In Honor of Dr. White. The King County Medical Society held a luncheon the latter part of August in honor of Dr. J. William White, of the University of Pennsylvania, who made a tour of the Northwest and Alaska in lieu of a European trip.

Dr. N. D. Pontius returned from Europe last month. He was in St. Petersburg when the war broke loose and was one of the last to escape from that capital. In Berlin he learned from personal experiences that the military was supreme and that the ordinary citizen had no claim even on a taxicab.

Dr. L. L. Williams, chief medical officer of the immigration station at Ellis Island, New York, has been in the Northwest for several months. He is inspecting the work of the immigration examiners in the various ports.

Dr. John Hunt, of Seattle, of the editorial staff of Northwest Medicine, has gone east for a year's postgraduate study in several of the medical centers.

Drs. R. C. Hill, of Irondale, and H. J. Coventry, of Seattle, have located in Port Townsend.

Dr. P. L. West, formerly of Seattle, has located in Riverside, where he is associated with Dr. Fryer, the county health officer of Okanogan County.

Dr. Elmer, of Leavenworth, has retired from practice and will live in Kent where he has a small orchard.

Dr. E. O. Houda, formerly of Centralia, has located in Tacoma after a year's study abroad.

Dr. R. A. Gould, of Kent, has gone East for several months post-graduate study.

Dr. A. F. Mattice, son of Dr. M. T. Mattice, of Anacortes, has left for San Francisco where he will specialize in diseases of the eye.

Dr. E. E. Hardy has located in Monroe.

Dr. E. W. White, formerly of Pasco, has located in Ravensdale.

Dr. C. B. Cowan and Mrs. Mary C. Morris, of Seattle, were married September 19.

OBITUARIES.

Dr. R. L. Smith, of Washougal, Wash., died Sept. 12, as suicide by shooting. The deed occurred in the rear of a drug store, cause being assigned as ill health from which he had suffered for a year. Recently he spent some time in a Portland hospital and had returned to resume practice. He was fifty-five years of age and one of the pioneer physicians of his city. He served two terms as mayor and was prominent in all affairs of the city.

Dr. Y. J. Acton, of Bremerton, Wash., died August 31. He was apparently in his usual health and died suddenly from disease of the heart. He was fifty-four years of age and had lived in Bremerton for eighteen years, at one time serving as mayor of the city.

Dr. Walter P. Gooding, of Bremerton, Wash., died August 31, after an illness of several months. He was thirty-nine years of age and for several years practised in Chico, going to Bremerton six months ago.

Dr. A. L. Heglar, of St. Johns, Wash., died in Spokane, July 27, from general septicemia. The disease started in his mouth, presumably from defective teeth. He was born in Tennessee forty-four years ago and practised in St. Johns for fourteen years.

Dr. R. T. Freeman, formerly of Seattle, Wash., died at Balboa, Panama, June 29. He was born in London seventy years ago and graduated from Oxford. He came to this country about thirty-five years ago. For many years he was professor of anatomy in the university of Tokio, but in 1900 became surgeon on the steamships Shawmut and Minnesota, on which he served for many years, running from Seattle to the Orient.

Dr. J. G. Wilson, of Portland, Ore., died August 27. He was seventy-two years of age and practised many years in Kansas, coming to Portland four years ago.

Dr. G. F. Hinmers, of Milwaukee, Ore., died August 31, from a fall from his carriage when the seat tipped out of the rear end. He was fifty-seven years of age. After graduating in medicine he practised in Montana, coming to Milwaukee eleven years ago.

REPORTS OF SOCIETY MEETINGS

OREGON.

OREGON STATE MEDICAL ASSOCIATION.

Minutes of the Fortieth Annual Meeting of the Oregon State Medical Association, Portland, Ore., Sept. 10-11, 1914.

HOUSE OF DELEGATES.

Thursday, Sept. 10, 10 A. M.

The fortieth annual meeting of the House of Delegates of the Oregon State Medical Association was called to order on Thursday, Sept. 10, 1914, at the "German House," Portland, Ore., by Dr. C. S. White, president.

The minutes of the last meeting were read and approved.

The secretary's annual report was read, duly accepted and placed on file.

The treasurer, being absent, no treasurer's report was read.

The Committee on Publication, through the secretary, reported that the program had been prepared, that all papers had been published in Northwest Medicine and that all other important matters which had been brought to the secretary's attention had been published.

The Commitee on Public Policy and Legislation made the following report:

Dr. C. J. Smith, a member of the committee, prepared a questionaire as follows:

(1) What are you doing to educate the lay public on medical questions?

(2) What, if anything, is being done towards license reciprocity?

(3) How do you handle the expert testimony question?

(4) What provision have you for medical defense?

These have been sent to the secretaries of all state medical societies and secretaries of state boards of health through the United States and Canada. Twenty-eight replies have been received.

The one regarding medical education has been evasively answered. In regard to the license reciprocity it is more encouraging, as a number of states now have reciprocity. In regard to the matter of handling expert testimony, practically nothing has been done, but in the matter of medical defense numbers of states are contributing $1.00 per capita for medical defense. Your committee begs to recommend the following:

(1) To endorse the efforts being made by the State Board of Health and Oregon Social Hygiene Society in the promulgation of medical knowledge.

(2) If any new medical practice acts, with definite requirements for medical education, can be passed, we would allow reciprocal relations with other states requiring like qualifications.

(3) In the matter of taking expert testimony, we have no recommendation to make.

(4) In the matter of medical defense, your committee is of the opinion that it would be unwise for the State Medical Society to embark in medical defense at this time. We believe that, until our Compensation Act has had a very thorough trial, it would be better for the society, as a society, to take no cognizance.

All of which is respectfully submitted.

There was no report from the delegate to the American Medical Association, due to Dr. Williamson's absence in Europe.

Communications: Dr. Thompson, of Salem: I would like the House of Delegates to consider the advisability of appointing a committee of, say three or four members, to confer with the members of the Compensation Commission and myself—we can arrange the place of meeting anywhere convenient—to consider the adoption of a schedule of fees for service rendered men injured under the Compensation Act. We find it will require a set schedule and we want a schedule that will work out and we thought that we might get an expression from the House of Delegates and arrive at some sort of a schedule.

On motion of Dr. Stearns, of Medford, duly seconded and carried, the chair appointed a committee of three, consisting of Drs. Sternberg, Swedenberg and A. E. Rockey.

The following resolution was presented and adopted:

Whereas, at the inscrutable will of an All Wise Providence, Dr. Samuel Tower Linklater has been suddenly called from this life to that beyond, it seems mete and right that more than ordinary record be made of his loss, having been for twenty-eight years a member in good standing of the Oregon State Medical Association.

His acquaintance among us embraced all its members and each one proved his friend. Modest and unassuming, he passed his professional career, strong in his attainments and learning, earnest and unselfish in his care of those under his administrations, and died as he lived in the path of beneficence and duty. He practiced unostentatious charity. His geniality, keen sense of humor, quiet and quick penetration of the mask of pretense and falsity, his kindly heart, intelligence and virility created for him, wherever known, the highest esteem and respect. He was in every honorable sense a man, physician, scholar and gentleman. Therefore, be it

Resolved, That in his death, our society, his many friends, his community and the State of Oregon have sustained a great sorrow and we mourn his loss.

Resolved, That a copy of these resolutions be spread upon our minutes and that an engrossed copy be sent to his family with our kindest condolence and sympathy.

The following resolution was then presented:

Resolved, by the members of the Oregon State Medical Association, in convention assembled, That our official publication, Northwest Medicine, deserves the patronage of business houses which seek to sell goods to the physicians of this state and, prices and quality of goods being equally favorable, we will make our purchases from the houses that advertise in Northwest Medicine.

The resolution was carried over till the next day's session.

There being no further business it was regularly moved, seconded and carried that the meeting adjourn until Friday, Sept. 11, 1914, at 9:30 A. M.

Friday, Sept. 11, 9:30 A. M.

The meeting of the House of Delegates was called to order by the president, Dr. White, at 9:30 A. M.

Dr. Manion, treasurer, read the treasurer's annual report. The president appointed Drs. House and Paul Rockey a committee to audit same.

Industrial Insurance Commission. Under the head of unfinished business the committee appointed to meet with the State Industrial Commission rendered a report through Dr. Sternberg as follows:

The committee appointed met with the chief surgeon of the Industrial Insurance Commission and with Mr. Beckwith, the chairman of the commission, and arranged a schedule of fees which we would like to have discussed. The arrangement is a tentative one and there are many things to be considered. It was decided that the schedule should be general rather than specific and the fee should be definite, i. e., there are to be flat fees for every injury rather than for particular kinds of injury and in that way we avoided getting into any complications. The minimum fee was decided upon because the funds of the commission are limited and if we are insured a fee it would be a better proposition, because the public might say it was a graft for the doctors and, as a matter of fact, we can easily show that the fees mentioned are not anything like we would receive as regular fees in these cases.

The report was received and placed on file.

Dr. C. S. White, of Portland, offered the following resolution:

Whereas, efforts are being made to have passed in this state a law removing all of the requirements and qualifications for the practice of dentistry. Therefore, be it

Resolved, by the Oregon State Medical Association, That it will use its every effort to combat the passage of this, or any other law, that detracts from the requirements and qualifications necessary for the cleanly, sanitary and scientific practice of dentistry.

The resolution duly adopted.

The House now resolved itself into a nominating committee and the following nominations were made:

For president: Dr. House nominated Dr. R. E. L. Steiner, of Salem; Dr. N. W. Jones nominated Dr. A. E. Rockey, of Portland; Dr. Pilkington nominated Dr. J. A. Fulton, of Astoria.

For first vice-president: Dr. Marcellus nominated Dr. R. J. Pilkington; Dr. Stearns nominated Dr. F. H. Thompson.

For second vice-president: Dr. Booth nominated Dr. Dale; Dr. Manion nominated Dr. Petit.

For secretary: Dr. Sternberg nominated Dr. M. B. Marcellus; Dr. Jones nominated Dr. Jos. Sternberg.

For treasurer: Dr. House nominated Dr. Katherine Manion.

For councillor (three to be elected): Dr. Jones nominated Dr. Petit; Dr. House nominated Dr. Swedenberg; Dr. Marcellus nominated Dr. C. S. White.

For alternate to A. M. A.: Dr. Sternberg nominated Dr. K. A. J. Mackenzie.

There being no further business to come before the House, the meeting adjourned.

Friday, 2:30 P. M.

The meeting was called to order by Dr. C. S. White, president. The first business to come before the association was the election of officers for the ensuing term.

For president: Dr. House withdrew the name of Dr. R. E. L. Steiner. Dr. Pilkington withdrew the name of Dr. Fulton. On motion of Dr. Mackenzie, duly seconded and carried, the secretary was instructed to cast the unanimous vote of the association for Dr. A. E. Rockey for president.

For first vice-president: Dr. Pilkington and Dr. Thompson being the only nominees the House proceeded to vote. A ballot having been taken and Dr. R. J. Pilkington, of Astoria, having received the required majority, he was duly declared elected.

For second vice-president: The name of Dr. Petit was withdrawn and the secretary was instructed to cast the unanimous vote of the association for Dr. W. H. Dale, of Harrisburg.

For third vice-president: Dr. Marcellus placed the name of Dr. R. J. Marsh, of Portland, in nomination for third vice-president. There being no further nominations, Dr. R. J. Marsh, of Portland, was duly declared elected.

For secretary: The name of Dr. Sternberg having been withdrawn, the president was instructed to cast the unanimous vote of the association for Dr. M. B. Marcellus, of Portland, for secretary.

For treasurer: There being no further nominations allowed for this office, the secretary was instructed to cast the unanimous vote of the association for Dr. Katherine Manion for treasurer.

For alternate to the A. M. A.: There being no further nominations, Dr. K. A. J. Mackenzie was duly declared elected alternate to the A. M. A.

The president then called for the report of the delegate to the A. M. A., Dr. Williamson, who stated that owing to just returning, it had been impossible for him to make a report but if agreeable to the members he would prepare a report and have it mailed to all present at the meeting.

No objections being raised, the delegate's offer was accepted. The association then proceeded with the scientific part of the meeting.

Scientific Program.

Thursday, Sept. 10.

10:30 A. M.

Digitalis Heart Block, Dr. T. Homer Coffeen.

Discussion opened by Dr. R. C. Yenney.

Cerebrospinal Fluid as an Aid to Diagnosis in Obscure Cases of Syphilis of the Central Nervous System, Dr. Lawrence Selling.

Discussion opened by Dr. William House.

2:00 P. M.

Early Stages of Genitourinary Cases of Tuberculosis, Dr. George S. Whiteside.

Discussion opened by Dr. G. S. Peterkin, Seattle, Wash.

Radiographic Diagnosis of Gastroptosis Coincident with Coloptosis, Dr. J. Philippe Tamiesie.

Discussion opened by Dr. E. B. Pickel, Medford.

The Value of Decompression Operation in Disorders of the Brain; A New and Conservative Procedure, Dr. K. A. J. Mackenzie.

Discussion opened by Dr. B. F. Boyden, Pendleton.

Present Status of Treatment of Goitre, Dr. T. M. Joyce.

Discussion opened by Dr. A. E. Rockey.

Friday, Sept. 11.

10:30 A. M.

Conservation of Vision, Dr. Joseph L. McCool.

Discussion opened by Dr. J. J. Emmons, Medford.

Progress in Orthopedic Surgery, Dr. E. A. Rich, Tacoma, Wash., and Dr. Charles R. McClure.

Discussion opened by Dr. Clarence W. Keene, Silverton.

2:00 P. M.

President's address: Standardization and Supervision of Hospitals, Dr. Calvin S. White.

Symposium on the Gallbladder:

1. Mucous Glands of Gallbladder, Their Origin, Pathology and Clinical Significance, Dr. J. Earl Else.
2. Early Diagnosis and Treatment of Gallstones, Dr. George F. Koehler.
3. When to Drain and When to Excise the Gallbladder, Dr. Andrew C. Smith.

Discussion opened by Dr. J. A. Petit.

Auto-Sero-Therapy in General Practice, Dr. E. A. Pierce.

Discussion opened by Dr. H. J. Clemmons, Salem.

WASHINGTON.

KING COUNTY MEDICAL SOCIETY.

Pres., D. H. Palmer, M. D.; Secy., G. W. Swift, M. D.

The regular semi-monthly meeting of King County Medical Society was held in the assembly room of the Chamber of Commerce, Sept. 7, 1914. Meeting was called to order by the president, Dr. Don H. Palmer. Minutes of the previous meeting were read and approved.

Proposed amendment to the constitution was read and a motion made by C. H. Thomson that the word "first" in the first sentence be stricken. Seconded, carried and so ordered.

C. H. Thomson moved that the next meeting of the society be held on the first Monday in October, so that the members could attend the state association meeting. Seconded and carried.

C. A. Martin explained the plan for the clinic day.

The assembly room having been rented to the British Relief Association, the meeting adjourned without presenting a program.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AN OTO-LARYNGOLOGY.

Pres., R. W. Perry M. D.; Secty., E. B. Burwell, M. D.

The first meeting of the Academy after the summer holiday was held, following a dinner at the Hotel Savoy, at the office of the president. In his absence the meeting was called to order by the vice-president, Dr. Klemptner, with the following members present: Drs. Pontius, Cameron, Gray, Greenstreet, Klemptner, Swift, Goodenow, McKinnon, Stillson, Wanamaker, Jones, Dowling. Visitors, Dr. Cooper, of North Yakima, and Dr. Joiner.

Vernal Catarrh. Dr. Goodenow reported a case in a child 7 years of age, first seen one week ago. He had lid trouble beginning last December, becoming worse in the spring and summer. Was diagnosed as trachoma by a general practitioner and treated with massage. The diagnosis of vernal catarrh was made from the cobble-stone appearance of the follicles and freedom of the interfollicular spaces from the affection, with the gelatinous exudate on the surface. Cornea not involved. Requests suggestions as to treatment.

Dr. Stillson agreed with the diagnosis and spoke of the usual course being intermittent. Thought he could detect slight corneal involvement at the limbus. Advised to keep the lids closed and try radium and x-ray.

Dr. Swift reported two cases of the corneal type in which he had used dionin with good results. Suggested thorough grattage under general anesthesia.

Dr. McKinnon advised mild friction with gauze and boric acid.

Dr. Greenstreet agreed with Dr. McKinnon, stating that in such a young child he did not believe in heroic measures.

Cancer of Vocal Chord. Dr. Perry reported a case operated by Dr. Ballinger in 1908. Left vocal chord removed for cancer with good result.

Dr. Klemptner stated that he was present at the operation and considered the result very good. Mentioned seeing several similar cases in Vienna.

Dr. Cameron, of Tacoma, addressed the society on recent observations in European clinics. Spoke of the color photography seen at Morax's clinic in Paris.

At Zurich Prof. Nagal was enthusiastic over irrigation in chronic otitis. In mastoids the chief thing noted was the extreme care in disturbing the middle ear. Does not curette the tube.

In Vienna he saw Prof. Fuchs, who wishes to be remembered to the members. In Berlin saw Profs. Killion and Holle. Described Holle's intranasal frontal sinus operation.

Saw Dr. West, who has devised an operation for dacryocystitis through the nose. He demonstrated the operation at the clinical congress but was not well supported.

Dr. Pontius described several operations seen at St. Petersburg or Petrograd.

Dr. Greenstreet read his report as chairman of the committee on arrangements of the Pacific Coast Oto-Ophthalmological Society and Dr. Stillson moved that Dr. Greenstreet be thanked for his excellent work.

FACTS ABOUT CERTAIN MEDICINES.

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Arlco-Urease.—A standardized preparation of the ureolytic enzyme obtained from the soy bean. It decomposes urea into ammonia and carbon dioxid and is used in the estimation of urea in urine, blood and other body fluids. The ferment is added to a measured amount of urine and, after a time, the amount of ammonia formed is determined. Arlington Chemical Co., Yonkers, N. Y. (Jour. A. M. A., July 11, 1914, p. 165).

Urease-Dunning.—A highly potent and standardized preparation of the ureolytic enzyme obtained from the soy bean. It decomposes urea into ammonia and carbon dioxid. It is used for the determination of urea in urine, the amount of ammonium carbonate, formed from the ammonia and carbon dioxid produced is determined by titration with volumetric acid. Urease-Dunning is supplied only in the form of Urease-Dunning tablets, containing 0.025 gm. Hynson, Westcott & Co., Baltimore, Md. (Jour. A. M. A., July 11, 1914, p. 165).

Electrargol for Injection.—Ampules containing 10 cc. electrargol in the non-isotonized condition. Comar & Co., Paris, France. (Jour. A. M. A., July 11, 1914, p. 165).

Styptick Applicators, Alum 75 Per Cent.—Sticks tipped with a mixture of alum 75 per cent. and potassium nitrate 25 per cent. Admitted to the appendix to New and Nonofficial Remedies. Antiseptic Supply Company, New York. (Jour. A. M. A., July 11, 1914, p. 165).

PROPAGANDA FOR REFORM.

Robinol.—Robinol is a glycerophosphate mixture exploited by John Wyeth & Brother on the discarded theory that certain diseases are due to a loss of phosphorus from the body and that this prosphorus deficiency is best remedied by administration of glycerophosphates. There is no evidence that glycerophosphates when administered act differently than do inorganic phosphorus compounds. At all events, if phosphorus deficiency really occurs, it would be more rational to supply the needed phosphorus in the form of foods rich in phosphorus such as milk and eggs. (Jour. A. M. A., July 4, 1914, p. 49).

Sevetol.—There was a time when physiologists thought that fats were absorbed into the blood in the form of a fine emulsion. It is now known that fat enters the blood after having been split into glycerol and fatty acids, the latter being, to a large extent, combined with alkalies in the form of soaps. Making use of the discarded theory Sevetol, put out by John Wyeth & Brother, is presented to the profession with the claim that it is a very fine emulsion of fat and because of this is readily absorbed. While Weyth & Brother would have physicians believe that Sevetol is readily absorbed and digested, it is evident that the amount of Sevetol which can be taken is limited not only by the power of assimilation but also by the power of digestion. (Jour. A. M. A., July 4, 1914, p. 49).

Tooth Detergents.—While many tooth preparations are alkaline from the soap which they contain, it is probable that weakly acid preparations are to be preferred. As the antiseptics in tooth powders and washes do not remain in the oral cavity for any length of time, they cannot exert any beneficial antiseptic action. Antiseptics may even be harmful in that their periodical application may render the organisms which infect the mouth more hardy and vigorous. (Jour. A. M. A., July 4, 1914, p. 50).

Dr. Jiroch Company, a Fraudulent Concern.—The federal authorities have declared the Dr. Jiroch Company, 533 S. Wabash Avenue., Chicago, fraudulent, and denied it the use of the mails. This medical mail order concern sent out a treatment which appears to have been the same no matter what the symptoms reported by the victim. Examination of the four kinds of tablets sent out, in the A. M. A. chemical laboratory, showed these to contain ordinary tonic and laxative drugs. (Jour. A. M. A., July 11, 1914, p. 179).

Lithium Salts in Uric Acid Diathesis.—There is no reliable clinical evidence that lithium salts increase the excretion of uric acid by the kidneys, except as they exert a diuretic action. Experimental work has failed to show that lithium salts or the alkalies cause the absorption of deposited urates, gouty tophi, etc. The popular belief as to the action of lithia is founded on a misinterpretation of chemical facts. There is no reason why lithium salts should be expected to favor the solution of uric acid or urates in the tissues, the blood-serum or the urine. (Jour. A. M. A., July 11, 1914, p. 184).

Wine of Cardui.—While the Chattanooga Medicine Company asserts that in the manufacture of Wine of Cardui no more alcohol is used than is necessary to preserve it, experiments indicated that the preparation contains only water-soluble constituents and that a non-alcoholic preparation might easily be prepared. Also, despite the owner's assertion that Wine of Cardui cannot be used as a tipple, large doses were taken experimentally with no observable effects other than those of alcohol; further, letters from physicians assert that the preparation is used habitually, evidently for its alcohol effects—probably unconsciously. The exploitation of Wine of Cardui is vicious and the public should be apprised of the facts. (Jour. A. M. A., July 18, 1914, p. 258).

Strychnin and Caffein in Cardiovascular Disturbances.—Aided by a grant from the Council on Pharmacy and Chemistry, Dr. L. H. Newburgh has made a painstaking study of the action of strychnin and caffein on cardiovascular disturbances. He concludes that, since the blood-pressure is not low either in persons showing grave symptoms of pneumonia or of those dying from that disease, and since it has been proved that the vasomotor arcs are normal in animals after death from pneumonia, it is logical to conclude that the vasomotor mechanism is not impaired in pneumonia. Strychnin does not improve or augment the work of the heart in persons suffering from broken cardiac compensation. It could not be shown that either strychnin or caffein stimulated the cardiovascular apparatus in any of the conditions studied. (Jour. A. M. A., July 25, 1914, p. 311.)

Sodium Fluoride.—While the poisonous character of fluorides is recognized, the use of sodium fluoride as a food preservative is still considered. As a result of experiments, F. Schwyzer concludes that fluorine preparations are poisonous even when administered in very small doses. (Jour. A. M. A., July 25, 1914, p. 323).

Vaccine and Serum in Hay Fever.—A serum for the treatment of hay fever is described in New and Nonofficial Remedies. Theoretically there can be no vaccine treatment of this disease for the reason that it is produced, not by bacteria, but by the pollen of various plants. The use of vaccines derived from the micro-organisms found in the nasal secretion are still in the experimental stage. (Jour. A. M. A., July 25, 1914, p. 340).

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Anoci-Association. By George W. Crile, M. D., Professor of Surgery, School of Medicine, Western Reserve University, Cleveland; and William E. Lower, M. D., Associate Professor of Genito-urinary Surgery, School of Medicine, Western Reserve University, Cleveland. Octavo of 259 pages, with original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.00 net.

Crile is a constructive medical genius. He has not only originated an hypothesis accounting for the production of shock but has elevated it to the dignity of a theory by pathologic, experimental and surgical demonstrations. He has placed psychic influences on an anatomic basis. Shock or, in other words exhaustion, may be caused by various stimuli of an excessive nature—by fear, worry, physical injury, infection, hemorrhage, muscular exertion, starvation and insomnia. The same destructive pathologic changes are found in the brain, liver and adrenals without regard to whether the shock be caused by fear, traumatism, infection or any other causes noted above. Excessive stimuli in relation to shock are called noci (harmful) associations and the system they act on (the brain, liver and adrenals) Crile styles the kinetic system because ordinary stimuli acting on it convert potential into kinetic energy—in the form of heat or motion. The various stimuli, already mentioned where excessive, act to fire the magazine (brain, liver and adrenals) and the resulting explosion destroys the cell protoplasm. In walking one has an example of the usual effects of stimuli on the kinetic system, whereas in the exhausted runner we see a condition of acute shock. Chronic shock is due to the same causes in less degree acting over a longer time. In many instances the older term nervous exhaustion would seem to cover many of the same cases.

The anoci (preventives against harm)—associations act in various ways. They may destroy the afferent paths of harmful stimuli, as by nerve blocking. They include the avoidance of worry, fear, anxiety or psychic stimuli. They embrace the use of anesthetics and drugs which lessen the activity of the kinetic system. Thus, morphin is first in this class, before, during and after surgical operations, and is indicated in all cases of acute shock. Strychnin is the antithesis of opium in this respect and is to be shunned above all other drugs in acute or chronic exhaustion from various causes. It sensitizes the kinetic system, as we have always known was the case regarding its effect on the nervous system. It increases fever and is to be discarded as a remedy in acute or chronic exhaustion, infection and in all the forms of shock. Strychnin is indeed anathema to Crile in this condition. While ether removes emotional causes of shock it does not destroy the afferent stimuli produced by the traumatism of an operation which act as severely as in consciousness, so that nerve blocking must be combined with it. Unlike ether, nitrous oxide tends to protect the brain cells from shock and is the anesthetic of choice with a skilled anesthetist, but is the most unsafe without one. Spinal anesthesia is undesirable in cutting off the vasomotor centers in the brain from the splanchic area and lower extremities and so lowering blood pressure. Local anesthesia alone is undesirable because of the danger of psychic shock. Avoidance of unnecessary traumatism during operation is absolutely essential in preventing shock. Blood transfusion is the remedy in acute shock. Crile's theory has a wide application in medicine as well as surgery. The book will fire every reader with scientific enthusiasm and he is to be pitied who cannot avail himself of its spirit. Whatever be the verdict of time Crile has, by anoci-association, reduced his operative losses almost 75 per cent.

WINSLOW.

Diseases of Bones and Joints. By Leonard W. Ely, M. D., Associate Professor of Surgery Leland Stanford Jr. University. Cloth, 218 pages, $2. Surgery Publishing Co., New York.

This is an excellent brief statement of the present teaching in regard to diseases of the bones and joints. The author has made an unusually thorough study of the pathology and bases his therapy thereon. It so happens that this study furnishes us a good reason for the treatment that has been found clinically the most satisfactory and calls for no revolution. The illustrations, particularly the reproductions of microphotographs, are excellent. Dr. Ely is perhaps best known as the author of an interesting theory as to the cause and cure of bone tuberculosis, which may be briefly stated as follows: There exist, in and about the joint, various tissues, such as compact bone, cancellous bone, red marrow, synovial membrane, cartilage, etc. Of these two are lymphoid tissues, namely, red marrow and synovia, and these two tissues are alone vulnerable to tuberculosis. Moreover, these two tissues are what make a joint a joint and, when the joint ceases to be a joint, i. e., is deprived of function, away go these two vulnerable tissues and with them the tuberculosis. "No function, no red marrow and synovia; no red marrow and synovia, no joint tuberculosis."

FASSETT.

Local Anesthesia: Its Scientific Basis and Practical Use. By Professor Dr. Heinrich Braun, Obermedizinalrat and Director of the Kgl. Hospital at Zwickau, Germany. Translated and edited by Percy Shields, M. D., A. C. S., Cincinnati, Ohio, from the third revised German edition. Octavo, 399 pages, with 215 illustrations in black and colors. Cloth, $4.25, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

The medical profession of America is to be congratulated that this authoritative work, written by a master, one might almost say the father of the method, has been placed at their disposal. The first half of the book is devoted to a historical review of the subject of local anesthesia, to a scientific discussion of the process of inducing local analgesia and of the different effects of the various drugs and agencies that are used for that purpose. Two chapters are devoted to a thorough description of technic. The various solutions are described, also different types of syringes and needles. All the details of the injections both for local anesthesia and for nerve-blocking are given with clearness and precision. The last half of the book gives the technic for inducing local anesthesia in all the different portions of the body. It is safe to say that no such a complete and comprehensive work on local anesthesia has ever been written and now that this translation has placed it in the hands of the English speaking profession there is an opportunity for every medical man to familiarize himself with the technic of the method, which is without mortality, and which is bound to win for itself a wider field of usefulness.

JONES.

Manual of Diseases of the Eye, for Students and General Practitioners. By Charles H. May, M. D., Attending Ophthalmic Surgeon to Mt. Sinai Hospital, New York, etc. Eighth edition, revised, 440 pages, 377 illustrations; price $2 net. William Wood & Co., New York, 1914.

This is perhaps the most widely known textbook on the eye. Practically every student purchases it and in later years finds occasion to refer to it frequently. Dr. May has revised his book as often as necessary to include the newer methods of treatment. It is essentially a ready reference for students and general practitioners. The descriptions are concise and accurate, the illustrations exceptionally good. Twenty-one colored plates beautifully illustrate diseased conditions of the eye. For the general practitioner who aims to do refraction it is particularly well adapted, as the description of methods of examination and the use of the various instruments are carefully explained. The last chapter gives a brief outline on the ocular manifestations of general diseases which is of value to all practitioners.

SWIFT.

Diseases of the Skin, Including the Acute Eruptive Fevers. By Frank Crozer Knowles, M. D., Instructor in Dermatology in the University of Pennsylvania, etc. Octavo, 546 pages, with 199 engravings and 14 plates. Cloth, $4.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book is of moderate size, eminently suited to the needs of the general practitioner. Concise descriptions of symptoms and clearly defined differential diagnoses are followed by conservative outlines of treatment that include all the recent approved methods such as X-rays, radium, light and carbon dioxide snow. Under syphilis the Wasserman and luetin tests are given in detail, followed by the methods of using salvarsan. The book concludes with a rather brief section on the exanthemata. The illustrations are well chosen and an aid to the student. Exception must be taken

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to a colored plate of lupus vulgaris which his anything but life-like. Some typographical errors could have been avoided, if a little more care had been taken in publication. PALMER.

Dental Electro-therapeutics. By Ernest Sturridge, L. D. S., Eng., D. D. S., Fellow of the Royal Society of Medicine, Member of the British Dental Association, London, Eng. 12mo, 318 pages, with 154 engravings. Cloth, $2.75, net. Lea & Febiger. Philadelphia and New York, 1914.

In this work the author devotes the first 207 pages to a description of the theory of electricity, general electrical apparatus and special apparatus and technic for dental use. In the second half he takes up the theory and practice of its application in dentistry. He first touches briefly on cataphoresis or the method of causing substances to enter the tissues by diffusion in the direction of an electric current according to the old idea, but now attributed to ionization. This consists in dissociation of a substance in solution into its ions or electrified molecules. Ionization the author believes is the best treatment of all forms of peridental infection. Zinc, copper and silver ions are often used. Thus, to apply zinc, a zinc electrode wet with a 3 per cent. solution of zinc chloride is applied to the anode and the zinc ion will be dissociated from the solution at the anode and be carried into the tissues by a current strength of 2 or 3 milliamperes. The depth to which the antiseptic is carried makes it more efficient than any other known method. The author finds it possible to cure all cases of pyorrhea, providing the collections of calculus are first removed, while by other methods the treatment is notoriously unsuccessful. WINSLOW.

A Handbook of Psychology and Mental Disease. For use in Training Schools for Attendants and Nurses, and in Medical Classes, and as a Ready Reference for the Practitioner. By C. B. Burr, M. D., formerly Supt. Eastern Michigan Asylum, etc. Fourth Edition. Cloth, 235 Pp. Fourth Edition, $1.50. F. A. Davis Co., Philadelphia.

This is intended as a handbook for nurses and attendants in training schools and should be found very practical and useful. In fact, it could be profitably read by all general practitioners. They would find the chapters on psychology and nursing the insane much more practical than in the large majority of textbooks on mental diseases. The general arrangement is simple and clear.

NICHOLSON.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume III. Number 3. Octavo of 215 pages, 54 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published Bi-Monthly. Price per year: Paper, $8.00. Cloth, $12.00.

The present number of Murphy's Clinics is as interesting as ever. There are some very good practical points brought out in diagnosis and treatment, such as kidney percussion in aiding diagnosis in urinary infection, pain in or below the scapular region in gall-bladder inflammation and the danger of vaginal examination in threatened abortion through possibility of inflection. The descriptions of the various operations are as lucid and valuable as always.

Anatomy and Physiology—A Text-Book for Nurses. By John Forsyth Little, M. D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. 12mo., 483 pages, with 149 engravings and 4 plates. Cloth, $1.75, net. The Nurses' Text-Book Series. Lea & Febiger, publishers, Philadelphia and New York, 1914.

This is a very thorough and comprehensive work for its purpose, but one can not help wondering how much of it will remain in the mind of the nurse after a few years. It would seem to err in being too detailed for nurse's use but this is a matter subject to much difference of opinion. It is certainly written clearly and at the end of the various chapters there are lists of questions which will be of service in fixing the more important points in the mind of the student nurse. The physiology follows the anatomy of the various organs. The writer, under "Organs of Reproduction," has delicately refrained from acknowledging the existence of male reproductive organs. A glossary of technical terms may be found in the back of the book. WINSLOW.

Progressive Medicine. Vol. XVI, No. 2, June, 1914. Edited by Hobart Amory Hare, M. D., Prof. of Therapeutics, Materia Medica and Diagnosis, Jefferson Medical College. $6 per annum. Lea & Febiger, Philadelphia and New York.

The value of a work of this kind is demonstrated anew with each volume that appears. The present number opens with a very comprehensive review, by Coley, of the recent literature concerning hernia. Gerster gives a digest of the recent advances in abdominal surgery. Of particular interest is his review of the recent work in the surgery of the spleen for the relief of certain of the essential anemias; and in the following chapter this subject is again covered from the standpoint of the internist by Stengel. In the chapter on gynecology Clark gives a very comprehensive and conservative statement of the results of radiotherapy in the treatment of carcinoma of the uterus and of malignant tumors in general. The book is well worth the reading. JONES.

Guiding Principles in Surgical Practice. By Frederick Emil Neef, M. L., M. D., New York City. Cloth; price $1.50; 180 pages. Surgery Publishing Company, New York.

This small volume is a successful attempt to place before the surgeon a logical technic for the management of surgical cases. It expresses in detail the viewpoint of the author on most of the phases of general surgical work. There is much of value about sterilization and the wash-up, and the chapters on the course of the operation and the postoperative care are particularly attractive. No one could fail to profit much by its perusal.

FORBES.

NORTHWEST MEDICINE

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ADDRESSES

THE EVOLUTION OF MEDICINE.*

By J. F. Critchlow, M. D.

SALT LAKE CITY, UTAH.

There has never been a time nor a place when custom and precedence have not had their influence in the affairs of life and, if this otherwise happy occasion must be marred by a more or less formal and prosy address, I must remind you that it is required of the office and not personal lack of consideration for you.

The doctor of today is of an ancient and honorable lineage. Since the first page of human history was written it has recorded man's struggle against sickness, pain and death; since the first cry of anguish, since the first feeble hand was stretched out in mute appeal for relief the remedy, no matter how inefficient, and the doctor, no matter how untutored and unskilled, began their being. Then and there, as by a spark from Heaven, was lit the lamp of unselfish service, placed on the altar of civilization and filled with the oil of human kindness. High ideals and unselfish motives have been the vestal virgins who have kept it burning ever since.

The evolution of medicine in its broader sense, and of its exponents, has been influenced by so many elements that its story has ever been fraught with charm and human interest. Evolution often works in a most mysterious, apparently incoordinate way, and the later product, though sometimes evincing atavistic tendencies and reversions in type, more frequently bears little or no resemblance to earliest and intervening forms. So it has been with medicine and the profession. Many of the earliest representatives of our calling, but more especially much of the earliest and even later practice, if history is to be believed, forms such a contrast to those of the present day that they seem to bear little or no relation to the latter. Yet the heritage has come down through the ages in unbroken descent, difficult though it may be to recognize any physical resemblance. This is apparent upon a moment's reflection. The human frame was the same in those days as now, subject to the same defects, identical diseases and similar accidents. No clime was exempted, no race immune. The insistent and persistent demand for relief through all the years has, without remission, required and secured the services and ministrations of our craft.

We are often prone, I think, to cast contemptuous eyes on the method, equipment, and exponents of early medicine and marvel perhaps at the crudeness and limitations of both; but history in this respect, as in all others, must be read in the light in which it was enacted. From that magic spot, wherever it may be, away back in the misty dawn of history, which cradled the primitive man, the tribes and nations became scattered over the face of the earth and thus their intercommunication cut off by impassable rivers, mountains and uncharted seas. Thus in each community and nation, in widely separated countries, in dissimilar environment, the healers of the race developed their skill and their art, their practice and their equipment, according to their varied conditions, their various abilities and ingenuity. There could be no mutual help and there was no harmonious development. If one small golden grain of truth was discovered by one it was not communicated nor recorded, and was usually interred with the bones of its discoverer. If many facts were observed, they were not systematized and coordinated and hence no science of medicine existed under such circumstances. Thus for a long time each successive generation must begin where his predecessor did, not where the latter ceased his labor.

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*President's Address, read before the Twentieth Annual Meeting of Utah State Medical Association, Salt Lake City, Utah, Sept. 29-30, 1914.

Again, medicine has always borne a direct relation to the existing status of the people, for its practitioners have been of the people and reflect the degree of enlightenment of each individual race or community. Before the dawn of so-called civilization knowledge was at a premium and superstition universal. Thus it was that the calling became identified with that of the priest or the astrologer, the prophet or even the chief of the tribe. Who should know best how to check the ravages of pestilence but the one who knew what constellation was responsible for it?—the astrologer. Whose tongue could best bespeak the grace and forgiveness of an outraged deity?—the priest. Whose hand could heal so surely as his that held the sceptre? Thus these highest representatives became in time, with tangible and material additions to their art, the healers of the people. Their vade mecum consisted of a prayer, an amulet, a charm, a fetish, an incantation. Truly, then, it must be said that empiricism and suggestive therapeutics must here have had their birth. One shudders at the realization of the years, nay centuries, of pain and suffering unmitigated, of sickness unrelieved, of needless sacrifices and untold misery when viewed in the light of our present knowledge and accomplishments.

A thought suggests itself here that may merit a word in passing. Supply and demand seem to regulate many things in this world and determine their trend and importance. Our heritage from those primitive medical methods has been principally superstitions, and it must indicate that the demand for the mysterious and supernatural on the part of the people has caused to persist this inevitable supply.

Civilization then crept up to the horizon and began to flood the world with its light. Speculative and deductive life supplanted the vegetative life. Some marvelous metamorphosis has taken place and the mind of man, judged by its activity, its brilliancy and its products no more resembles its prototype than the butterfly the worm. As the astronomer began to name the stars in the firmament and make them keep tryst with his hourglass; as the geologist began to read in the rock-ribbed sides of the mountain the autobiography of the earth; and the alchemist began to pry molecules asunder and join them in wedlock again, so the doctor, inspired with sublime and holy ambition, began to probe into the secrets of nature and wrest them from her one by one.

As one by one the sciences and arts developed new facts and opened up new avenues of thought and investigation, so with equal step came the medical profession and adapted them to the healing of man. The vineyard of their labors now became set apart and within its confines they became imbued with a zeal, enthusiasm and singleness of purpose to meet the common enemy with new-found and more efficient weapons. Superstitions became hereditary, did not vanish but became less potent, and the nature and causes of disease became more tangible and better known. The human anatomy, formerly unread and neglected, became an open book. The heart was found to be, not the seat of the soul, but the fountain of a vital life-stream. The lancet supplanted the magic oil; vaccination took the place of amulets; and blessings too numerous to number in this brief hour tread upon each other's heels. On through the dark ages they worked, throwing across the gloom of those benighted times practically all there was of beneficent and kindly light.

And yet, though medicine began to assume the dignity of a science, with a system becoming more and more efficient and exact, I said superstition still existed. It existed, however, now, more in the minds of the laity than in that of the doctor. They looked with awe and suspicion upon the doctor and his accomplishments because of ignorance of his methods and because of a superstitious dread of his audacious assumption in entering the domain they had deemed supernatural. Other circumstances, furthermore, became obstacles to rapid development of the science and its application. Groups ot envious, bigotted, and fanatical priests, fearful lest their power and influence with the people become impaired, preached of heresy, blasphemy and impiousness. Still another factor operated. Like all the good things of life, they must have their imitations, and the very successes seem to beget a base horde of pseudo-sciences, "isms" and "ologies" with their ignorant and unscrupulous exponents; and as weeds thrive best in flower gardens, so did they.

Like the hydra-headed monster, when one head was removed by some adroit stroke of truth, two grew to take its place. Charlatans, quacks, necromancers, tricksters, soothsayers, pseudo-prophets and scientists were in the past, and are today the greatest obstacles to medical advancement. Then, as now, superstition and fraud too often wore the habiliments of science and basked in the court of kings, while truth lay manacled in dungeons. It was natural that schisms, sects and cults should develop in the profession at this time, which gave more ammunition to this class of impostors but from which condition grew good, for, by their fierce and heated debate, came the winnowing ot the chaff from the golden grain.

From this stage of the evolution of medicine let me pass to the present but not before a word again concerning our legacy from them. Unselfish service to the cause of humanity was its keynote—self-sacrifice, pure motives, conscientiousness, courage with humility, compassion and sympathy with charity. These things they had without measure and, if many of their teachings and practices were error, they taught and practised honesty. We have little to add today to their code of morals and ethics. Those were the qualities of heart and soul which they ever fostered and developed, and which they have transmitted to us. Theirs was the age of empiricism in its most conspicuous form. There was much of art in what they did, but little of science. They often discovered what to do, and established rules for its accomplishment but rarely knew the why. .

The best illustration of this blending of ignorance and conscientious zeal is found in the memoirs of Ambroise Pare, born in 1510, and who, as you know, first used the ligature as a substitute for the cautery. In his "Opera Omnia" he relates this experience: "I had read in John de Vigo of wounds in general, that wounds made by firearms partake of venosity by reason of the gunpowder and for their cure he bids you cauterize them with oil of elders, scalding hot, mixed with a little treacle. At last my oil ran short and I was compelled instead of it to apply a digestive, made of yolks of eggs, oil of roses and turpentine. In the night I could not sleep in quiet lest I should find those to whom I had not applied the said oil dead from the poison of their wounds; which made me rise very early to visit them." Contrary to expectations he found those treated without cauterizing much more comfortable than the others and adds, "Then I resolved nevermore to burn thus cruelly poor men with gun-shot wounds." He proceeds, "When I was at Turin I found a surgeon famed above all others for his treatment of gunshot wounds, into whose favor I found a way to insinuate myself, that I might have a recipe of his balm, as he called it, wherewith he dressed the wounds, and he made me pay my court to him for two years before I could possibly get the recipe out of him. In the end, thanks to my gifts and presents, he gave it to me, which was this: To boil down in oil of lilies young whelps just born, and earthworms prepared with Venice turpentine. Then was I joyful and my heart made glad, that I had learned his remedy which was like that which I had obtained by chance."

This seems almost pathetic and yet illustrates the character of the men and state of medical education of that time. It shows that medical knowledge was not obtained from libraries and clinics; that there was still little dissemination of medical learning, and also that men were willing to spend an immense amount of energy and patience to obtain one little increment to their small store of facts. I cannot dwell longer on the medicine of the past, though much of its story is fascinating and instructive, but I felt that even so crude a sketch as I have drawn might in a comparative view be helpful in looking at the present.

If Beethoven, Mozart, Mendelssohn or any ot the old masters could hear their immortal harmonies played upon a modern instrument, who can doubt but that they would be transported by them. Much that we have accomplished and boast of has been possible, and could only become possible, through the use of certain modern or later instruments to work with. Much that we have was the product, the dream and the effort of the old masters in medicine whose ideas have been developed and amplified by modern agents. To the medical banquet-table of the doctor of today every science and art, invention and industry, have been the purveyors. It has been spread with so lavish a hand that it groans with its bounty and we can feast to surfeiting even with the crumbs that fall from the master's table. Time was when the diet was meagre and excessively plain—a cup of water and a crust of bread. Time was when one could have grasped the sum and substance of all medical knowledge in a few brief hours or weeks at most. A few small volumes comprised its library. Yet a little later and a year or two at most, without the suggestion of hospital training, was ample for full equipment; and then, which was not so many years ago, the value and efficiency of a doctor was estimated purely by the standard of experience. Numbers of years, particularly if they had left their frost about his temples, was the sine qua non for the inspiration of confidence. Today, thanks to the increasing requirements of our medical schools and the availability of hospital interneships for subsequent training, the young man begins nearly where the man of a few years ago ceased to advance.

If, now, I am so fortunate as to hold your attention a few moments more, I desire to point out briefly some of the things which the present suggests. It is said so often, and it therefore must be common observation, that the day of the old family doctor is passed. It is a regretable fact, if it be so in some respects, but is a necessary result of the times. There was a time when the doctor was able to do all there was to be done in a family and do it as well as anyone else. He even went to the trouble of carrying his own drug store and compounded at the bedside his own prescriptions. I may add that when he ceased to do this, he abandoned a very potent factor in the efficiency of his treatment—suggestive therapeutics. He was able to do eye, ear, nose and throat work because forced to it. So with surgery, gynecology, obstetrics and the whole field. This has become unnecessary, and we all must admit impracticable, excepting in most remote and isolated places.

Whether the laity demanded and created the specialty or whether the specialist created the demand I leave for you to judge, but nevertheless the eye, ear, nose and throat men came and are evidently more or less permanent tenants. Can anyone question that they are a necessity when one considers the best interests of the laity? Can anyone question that this branch of medicine has been hereby immeasurably advanced and perfected, amplified and rendered more efficient? Can anyone doubt that it has contributed, ipse facto, to the huuman and even to the industrial economics of the world, not to mention its happiness? Who would say that its still further specialization into its component branches will not still further advance its own and the world's best interests?

Again, the alienist and neurologist developed, He has dethroned the family doctor in one respect from the family fireside. He has become, on accasion, one of the family penates and shares, if not usurps, an equal place upon the mantel. Does any one regard him as a mere transient? All one needs is to observe him among the occupants of our penal institutions and see him rescue the ill and unfortunate from the essentially base.

The laity, by habit or instruction, have come to regard these divisions of labor, so to speak, as a matter of course. We are coming rapidly into an age whose keynote is specialization, and it seems to me there is more and more necessity for the extension of this tendency. The major branches, medicine, surgery and obstetrics, have become so rapidly developed in the last twenty years, so amplified and extended in their respective fields, that to study, appropriate and efficiently apply them would require more energy and capacity than the average man possesses. From the very fact that our facilities are greater, the agents for diagnosis and treatment enormously increased, has the public a right to expect and demand that our work shall be correspondingly better and more efficient. In other words, if we become, any one of us, the internist we ought to be, equip ourselves as we have now the opportunity to do, become as familiar with all the instruments and agents for diagnosis, scientific and efficient treatment and keep ourselves abreast of the moment, we must do so at the expense of some other branch. To skim over and become possessed of a large number of facts, without time for their digestion, is not science, surely, and the man who tries to impress people that it is will sooner or later be discovered.

By the same token the surgeon, to be what the laity have a right to expect and who equips himself as he should, must do so at the expense ot some other field. To learn the McBurney incision and a method of invaginating the stump is not necessarily surgery, even though it may be cutting. One hears of specialism and specialties ad infinitum. Almost every anatomic region has been taken up as a specialty by someone, somewhere, at some time. Imagine a heart and lung specialist, when in the case of lobar pneumonia the patient complains of abdominal pain, as he commonly will; he should immediately summon an abdominal specialist. Yet things equally absurd are being done today by certain unscrupulous combinations, much to the attendant's discomfort and financial burden. I approve of combinations, may I add in passing, when made up of high-minded and honest men and would heartily encourage the same, but as in many other things it has its unscrupulous and abusive imitations. This practice is the other extreme, and a small, disagreeable, word will suffice to characterize it—graft.

There are other specialists, the pediatrist, the orthopedist, the obstetrician, etc., but there are not enough members of the profession in a given community who practise them as exclusive specialties. If a city will develop fifteen or more eye specialists, why not at least as many in children's diseases or in obstetrics—nearly perfect as such in their respective lines as our present science and art can make them? Does anyone doubt that there would be an economic value to our children? Would you not see fewer mothers infected or mutilated, going through life with a pathology which greater skill and concentration could have prevented? Would you not see fewer crippled crafts launched upon life's sea?

In this connection let me suggest that the lines of cleavage are today improperly drawn. They should be established upon a different plan from what they frequently are. Take, for example, pediatrics. The ideal specialist will bring a case of scarlet fever to a safe recovery but, after he has diagnosed a case of intussusception or appendicitis, he should immediately summon a surgeon, who is expert, to operate. He should summon an orthopedist to correct the talipes. I submit that the times point to this and, further, that the sooner this division of labor is brought about the more clearly will exact justice be done to a poor benighted and suffering public and the ideal approximated.

Before these things will be realized two things, chiefly, must come to pass. The more important accomplished, the other will follow as day the night. First, there must take place in ourselves a mighty change. Petty jealousies and mutual distrust must be purged from us and in their places must be planted and fostered a generous unselfishness and a compassion almost infinite. We must inspire in each other a mutual confidence which will know that you and I are going to give each other the square deal, and that duty to our patients and all who trust us is going to be to us, as the law of the Medes and Persians, immutable. Specialism extended may seem at first thought to have some objections, as tending to make men more narrow. But so many now feel that they are keeping abreast of the times in knowledge and efficiency in all the branches, they certainly could at least avoid narrowness and lack of perspective in following a specialty.

The second requirement is the education of the public to the fact that not all men with the title of M. D. are equally efficient in all branches, just as they do not now believe the family doctor capable of removing a cataract. They would demand to know what training and qualifications for a particular class of work the one to whom they intrust themselves possesses.

The family doctor! I hope he will never become extinct. I like to see a family cling year after year with unfailing loyalty to the doctor of its choice. But he must be honest, he must be conscientious and faithful to his trust in the sense above suggested. If he be, he will be as much beloved, honored and appreciated as the one of the "Bonny Briar Bush," but his capacity, while equally dignified, will have become materially changed. He may be a surgeon simply, he may be an internist, or any other specialist, but he will refer his case for requirements not in his line, knowing they will still come back and be his own again. He will be the family guide, doing his full duty in the light of the highest ideals. When these two prerequisites obtain, as I firmly believe they will, many evils and abuses will take the wings of the morning. The traffic in human misery by the selling to the highest bidder the people whose confidence they obtain, the isms, the pseudo-scientists, the quacks, the charlatans, and all the pack will some day hide their heads, for the people will rise from their stupid cruelty. We are anxious to teach them but let us be sure our hands are clean before we break bread for the multitude.

LEGAL RELATIONS BETWEEN SURGEON AND PATIENT.*

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When the duty devolved upon me to write this article I began to appreciate how the physician and surgeon in the rush of practice neglects to continue to study this phase of our profession. Realizing that in a paper of this length one can only scratch the surface, I will endeavor to touch on it generally and, if I am able to cause you yourselves to delve further into this subject, my object will have been accomplished.

A doctor who knows nothing of law and a lawyer who knows nothing of medicine are deficient in essential requisites of their respective professions. Ingraft so much law upon medicine as may improve the stock and infuse so much medicine into the law as may purify, strengthen and improve its administration. Both the sciences shall thus grow brighter in reflected light and both shall conduce, to the mutual support of each other, to the lasting benefit of mankind.

The operations to which I shall refer are those in the course of which the patient is put under the influence of a general anesthetic and where he has designated no one to speak for him during the period of unconsciousness. The question is purely one of contract. We must look to that subject for the principles to be applied. Whatever right or authority the surgeon has in the premises he derives by agreement, expressed and implied, with his patient.

Expressed, executory agreements seldom contain everything which was in the contemplation of the parties at the time. Some terms may be unexpressed because considered self-evident. Some elements may be omitted by oversight. What is implied in an expressed, executory contract is as much a part of the agreement as what is expressed. The rule of reason is inherent in mental processes and must always be applied in human transactions. To the expressed stipulations of an executory contract the law ingrafts, (1) those elements which are essential to complete the contract as the parties must have intended it, and which are reasonable and necessary inferences from the expressed stipulations and the circumstances, or were reasonably in the minds of the parties at the time; and (2) those elements which, although not manifestly in the contemplation of the parties at the time, are essential to a rational execution of the agreement, or to the attainment of the general purposes of the agreement.

Usually the expressed stipulations for a surgical operation are very meagre and are clothed in the most general terms. Often the essential features are not discussed. Details are almost never referred to. We must look to the purpose of the operation and the other circumstances to find, by inferences, the terms of the agreement. Where the facts are not disputed and only one conclusion can be reasonably drawn therefrom, such inference may be conclusive presumption of fact and, therefore, become a part of the contract, as a matter of law. That is, where the only reasonable inference from the facts and circumstances is in favor of the exercise by the surgeon of certain authority, such authority should be considered as being within the purview of the original contract of employment, as a matter of law. Where the only reasonable inference from the stipulations and the circumstances negatives the right of the operator to exercise a certain discretion, the exercise of such right by the operator should be considered, as a matter of law, to be no part of the contract. However, if the legitimate inference to be drawn from the stipulations and the circumstances would either affirm or deny the right to perform a certain act, then the question of the authority of the operator to perform such act should be left to the jury, to be determined as a matter of fact. In other words, where reasonable men, uninfluenced by ulterior motives, might arrive at different conclusions as to the authority for the act under the stipulations and the circumstances, then the question of authority should be left to the jury as one of fact.

The surgeon cannot go beyond the authority given him by the patient. To this proposition there can be no exception. The difficulty lies in determining the extent of his authority. Generally it must be inferred in great measure from the circumstances. Not his wish, but the patient's welfare, must control, when stipulations do not cover the point; but even his notion of the patient's welfare must give way to the expressed wish of the latter. Where the patient has decided, there is no occasion for the exercise of the surgeon's discretion. He is bound by his patient's conclusion. Where there is an expressed stipulation, there cannot be an implied one inconsistent therewith. Where a specific operation has been agreed upon, and the preceding circumstances are such as to negative the idea of an intention on the part of the patient to lodge a discretion in the operator, any departure from the specific operation by the latter would be a trespass, for which he may be required to respond in damages. What was fairly within the mind of the patient? That was implied. What does the welfare of the patient require? In the absence of inconsistent stipulations, the patient will be presumed to have intended and authorized what was for his best welfare. Anything which, within the discretion of the practitioner, was reasonably necessary to accomplish the general purpose of the operation will also be presumed to have been intended by the patient.

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*President's Address, read before the Twenty-second Annual Meeting of Idaho State Medical Association, Boise, Ida., Oct. 8-9, 1914.

Mere consent to an operation necessitating a general anesthetic does not extend the agreement beyond the reasonable limits of the specific relief stipulated at the time the patient goes under the influence of the drug. An agreement with reference to the performance of an operation does not imply consent to an entirely different or more extensive invasion of the body. In fact, under the doctrine that the specification of one is the exclusion of others, the right to perform a distinctly different operation would apparently be specifically prohibited. The mere employment of a surgeon to perform an operation does not give him implied authority to do whatever, in his discretion, he may deem necessary or expedient, without consulting the wishes of his patient. Great though his responsibilities are, they do not confer upon him unlimited, arbitrary, and absolute power to treat his patient in accordance with his own judgment, without reference to the wishes of the latter.

In practice the surgeon should get previous authority to perform such operation as, in his judgment in the progress of the work, the welfare of his patient requires. In the absence of such general and unlimited stipulated authority, it must be conceded that the welfare of the patient demands that the operator shall have power to deal with unforeseen incidents and unexpected conditions as they arise in the progress of the stipulated operation, in such manner as the operator shall consider proper, and, in the absence of expressed prohibition, the authority is reasonably inferred from the circumstances.

Thus, a surgeon diagnoses a patient's trouble as a uterine tumor and is engaged to remove it. On entering the cavity he finds the tumor as diagnosed, together with another smaller tumor, both of which can be readily and safely removed in the one operation. The patient's welfare, in fact the general purpose of his employment demands that he remove both without waiting to get the expressed consent of his patient. Removing a diseased appendix in the course of a general abdominal operation ought to be considered authorized, as within the general purview of the primary undertaking. The implication of authority must necessarily be as great as the implication of the responsibility of the surgeon in the premises. In fact, there should be some latitude for the exercise of the operator's discretion and doubtless such right must have been contemplated by the parties, and, therefore, the responsibility to act would not extend as far as the implied authority.

The following propositions are founded, I believe, on a common-sense view of the situation:

1. Where the stipulations are general with reference to some general relief desired, the operator is given a wide latitude of discretion, and is at liberty to do any act reasonably calculated to effectuate that general object.

2. Where there is a general agreement with reference to a specific operation, the operator has implied authority to do anything reasonably calculated to afford the specific relief contemplated but the authority does not extend beyond the general purview of said relief.

3. Where the agreement contemplates a specific operation for the purpose of some general relief, the operator has implied authority to do anything reasonably incident or collateral to the specific operation, or reasonably necessary to the fullest measure of the general relief sought.

4. Where the agreement contemplates a specific operation for the purpose of some specific relief, the necessary inference limits the operator to the specific operation and such collateral matters as may be reasonably necessary to bring about the specific relief contemplated.

5. Where there is a general agreement with reference to a specific operation, the right to perform the same according to the professional discretion of the operator is necessarily implied.

6. A general agreement to perform a specific operation implies the consent of the patient to the performance of all incidental operations related to and reasonably growing out of the primary operation.

7. A general agreement covering an operation for specific relief implies the consent of the patient to the use of all the means reasonably calculated to accomplish that purpose.

8. Where an end is required, the necessary means are implied, when not prohibited.

9. Surgical operations cannot be performed as you erect a house or construct a machine, according to plans and specifications; the patient must necessarily confide in the operator, in many respects, to do what in his judgment the welfare and health of the patient may require, in view of previously known conditions and of unexpected situations as they arise during the progress of the operation.

10. Where the patient forbids specific things, his wishes must be respected, and a breach in this respect makes the operator a trespasser *ab initio*.

11. To the knowledge of the patient it frequently occurs that complete diagnosis is not made until after the patient is under the influence of the anesthetic, in which event the latter must be presumed to consent to any operation not expressly prohibited, within the general purview of the employment, which the operator finally concludes in good faith the patient's condition demands.

12. The circumstances under which the question arises as to whether an operator exceeded his authority are so diversified and individually distinctive that the courts cannot lay down any hard and fast rule to fix the line at which the patient's consent ends and the operator's trespass begins.

13. If the facts are such that the law imposes a duty on the operator to give the relief in question, the consent of the patient is implied and, even in cases where the situation is not so serious as to raise a legal duty, the determination of the operator to act, if in good faith, apparently for the welfare of the patient, and within the general purview of the agreement, ought to be final and binding upon the patient unless clearly and manifestly wrong or expressly forbidden by the patient. Whether there was a material departure from the contract by the operator may be a question of fact for a jury.

In the following instance the patient was taken by her family physician to a specialist for examination of her hearing. After examining both ears, the expert decided an operation on the right ear was necessary. Later the patient submitted to an operation for that purpose and, after she was under the influence of a general anesthetic and the surgeon examined the right ear, he found that such operation was not imperative at that time but, upon examination of the left ear, he found it in such condition as to demand immediate attention. Without waiting for the patient to recover from the anesthetic and getting her consent, he abandoned the operation on the right ear and operated on the left. It may be inferred from the opinion that the operation was upon the middle ear through the drum. The operation originally contemplated would apparently have required a similar invasion of the body on the right side of the head.

After leaving the hospital the patient brought an action for assault and battery against the surgeon. She was successful before the jury and obtained a verdict of $14,322.50. The defendant moved for a new trial and also for judgment against the plaintiff, dismissing the suit, notwithstanding the verdict, on the grounds that the patient's consent was not necessary; that the patient did, in fact, consent to the operation as performed; and that the consent of the patient was implied under the circumstances.

The motion for a new trial was allowed on the ground that the verdict was excessive and the plaintiff appealed therefrom, but the motion to dismiss the suit was denied and the defendant appealed from that part of the order. The court found that the operation was successfully and skilfully performed and was of a generally beneficial nature to the patient. There was no bad faith shown on the part of the operator.

This case appears to be quite generally misunderstood. The opinion shows a thorough consideration of the subject by the court and is in perfect consonance with the rights of all parties concerned, though it is barely possible that the defendant's motion to dismiss should have been sustained on the ground that the consent of the patient was implied. It is impossible to lay down any strict rule for determining what constitutes an improper departure from the specific agreement between patient and operator, since each case must depend upon its own special facts.

In an action for assault and battery brought against a surgeon by a patient the following facts were shown:

The patient had been operated upon a couple of years before for a rupture on the left side and it was causing him some trouble. He consulted the surgeon with reference to the same, and apparently the surgeon's diagnosis was limited to an examination of the specific rupture. The defendant advised an operation but it appears that, while such operation was advisable, it was not imperative. After the anesthetic had been administered the surgeon discovered on the right side a hernia which was a serious menace to the patient and of a character to cause his death should strangulation occur, and operated for the latter trouble without first procuring the patient's consent.

The trial court correctly stated the law, to the effect that the patient must be the final arbiter to decide whether or not he will take the chances of an operation and that his consent, expressed or implied, must be given before a surgeon can lawfully operate. But the court held that the consent to operate for one hernia, under the circumstances, was not, as a matter of law, an implied consent to operate for the other and left the question of consent to the jury as one of fact. The jury found that the patient did not consent and rendered a verdict of $1,000 against the surgeon.

On appeal the upper court, ostensibly rejecting this rule as being unsuited to modern operations, held that under the circumstances consent was reasonably implied and laid down the rule, in substance, that when a person has selected a surgeon to operate upon him and has appointed no other person to represent him during the period of unconsciousness which constitutes a part of such operation, the law casts upon the operator the responsibility of so acting in good faith, in the interest of his patient, within the reasonable scope of his employment and the general purpose of the relief sought, that the latter shall receive the fullest benefit of that professional judgment and skill to which he is legally entitled.

The suggested fiction that the surgeon becomes the agent of the patient under an anesthetic only complicates matters, since the same questions arise in determining his authority as agent and must be answered on the same state of facts.

This case, while ostensibly announcing a different rule from the one given in the first case, in reality merely justifies the extension of the field within which the court will consider that, as a matter of law, the patient by implication consented to the operation as performed, but leaves the rule the same, namely, that, where the operation performed was not the specific operation agreed upon, the question as to whether there was such a substantial departure from the scope and purpose of his employment as to negative the idea of consent is often a question of fact for the jury, to be determined from a consideration of all the circumstances in the case, including the general purpose of the employment, the character of the operation specified and of the one actually performed, their relation to the relief sought, the exigency of the situation, the general welfare of the patient, the good faith and fair dealing of the operator.

When a person agrees, in general terms, with a surgeon for an operation for specific relief and, in pursuance thereof, takes a general anesthetic without giving any special instructions to the operator, he impliedly gives the latter authority to do any act reasonably necessary to accomplish the general purpose of his specific employment or clearly incident thereto and, in his discretion, to depart from the specific operation originally contemplated, so far as to give the patient the fullest measure of benefit from his skill, judgment and observation, within the purview of the relief sought. Thus, in the first case, if the general employment had been to relieve the patient of defective hearing and had such relief been the specific purpose of the operation agreed upon, the mere fact that the surgeon made a wrong operative diagnosis, resulting in recommending an operation on the wrong ear, should not have limited his authority to an operation on the ear mentioned, because the patient was entitled to have the benefit of his skill and best judgment at all times. Neither party should be bound by the mistake. On the other hand, if the relative conditions of the ears changed between the examination and the operation, the surgeon should be considered as having the implied authority to deal with conditions as he found them at the time, keeping in view the general purpose of his employment, to relieve defective hearing.

The converse of the proposition may throw some light on the subject. The patient has certain rights in the premises. In fact, his rights are the controlling factor in the situation. His welfare is the origin of the relation and gives character to the entire transaction. Would he have reasonable grounds for complaint, under the circumstances, if the operator had not acted in the manner he did and performed the operation in question? An affirmative answer to this question means that consent was implied. What did the patient have a right, under the law and the facts, to expect? If the answer be the relief given, the consent was necessarily implied.

The surgeon operates for a fibroid tumor and removes the same. During the operation he discovers a badly infected appendix, not detected by the operative diagnosis, ready to break and send its virus throughout the abdominal cavity at any moment, perhaps before the patient leaves the operating table. What are the patient's rights? What is the operator's duty? The implied consent of the patient must be broader than the operator's duty, for there must be a field within which the latter may use his discretion. There can be no duty on the part of the one without an implication of consent in reference thereof on the part of the other.

In no event is the operator justified in performing an operation which the patient has expressly forbidden. Even though he may consider that the health and welfare of the patient demand immediate operation, he has no right to disregard the prohibition of the latter.

In a certain English case, which apparently did not go beyond the nisi prius court, a young lady consulted an eminent surgeon relative to some ovarian trouble. The latter advised an operation. Before consenting, the patient told him that if he found only one ovary diseased he should remove it but if both were involved he must not remove either. To this express inhibition the surgeon claims to have replied, "You must leave that to me." The patient claims that she did not hear such remark and, of course, in that event could not have acquiesced therein. On opening up the cavity both organs were found to be badly diseased and the surgeon removed them.

The patient brought action for damages for operating in violation of instructions. There was evidence to the effect that her health and, possibly, her life, required the excision of the organs. There was no claim of unskilfulness or carelessness. The court instructed the jury to find for the surgeon, thus holding, as a matter of law, that the patient had consented or that, having consented to an operation of the character in question, it was for the surgeon to determine to what extent he would go in invading her body.

Such holding is clearly wrong, as the jury should have passed upon the question as to whether, under the circumstances, the patient did in fact leave the entire matter to the discretion of the surgeon. In view of her expressed prohibition, if she did not hear his alleged reply and if she did not withdraw her instructions, he was a trespasser *ab initio,* whatever may have been his motives and regardless of what he thought her health and welfare required. The ovaries belonged to her, not to him. Whatever right he had in the premises he derived by contract with her and, under the circumstances, the burden was on him to establish his right and authority.

The surgeon is bound to exercise the utmost faith and fair dealing towards his patient in respect to the operation to be performed, and any material deception will convert his efforts into an assault justifying punitive damages, regardless of his real motives. He dare not falsely pretend that only a slight operation is necessary and contemplated and then, after his patient is under the influence of an anesthetic, perform a more extensive and serious operation.

ORIGINAL CONTRIBUTIONS

DIGITALIS HEART BLOCK.*

By T. Homer Coffen, M. S., M. D.

PORTLAND, ORE.

Certain long recognized clinical facts in regard to the heart's action have been explained by the advances in our knowledge of the anatomy and physiology of the heart and especially of the bundle of His. Stokes-Adams disease, or complete heart-block, was clinically studied long before Erlanger showed that the same dissociation between auricular and ventricular contraction could be produced in the heart of the laboratory animal by clamping the auriculoventricular septum. Before that His had described a peculiar structure in the septum, the function of which was not understood. Since then various workers have established the fact that this bundle of special muscle and nerve tissue is a part of a very intricate mechanism which serves as a conducting pathway from auricle to ventricle, through which the impulse causing contraction passes, causing first the contraction of the auricle, and, one-fifth of a second later, of the ventricle. This impulse arises in the region of the venous sinus, passes down through the fibres of the pathway in the wall of the auricle, thence through the bundle of His, in the auriculoventricular septum, to the papillary muscles and wall of the ventricle. This pathway,

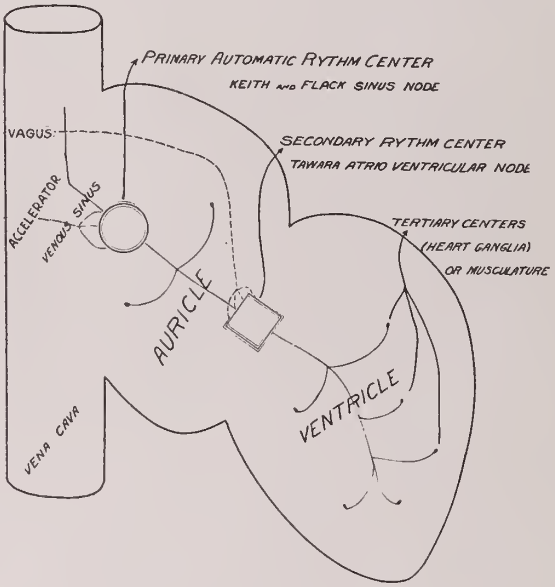

Fig. 1.
Indicating pathway of heart impulses.

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*Read before the Thirtieth Annual Meeting of Oregon State Medical Association, Portland, Ore., Sept. 10-11, 1914.

with its various "nodes," is shown diagrammatically in the accompanying figure. (Fig. 1.)

Various pathologic conditions in the course of this pathway may interfere with the passage of the contraction stimulus, as will be pointed out later; digitalis may produce the same obstacle to its transmission. First, however, it may be well to mention other properties of heart muscle which influence the heart's autonomy.

Besides (1) *conductivity*, of which we have just been speaking, there is

(2) *Stimulus production*, which is assumed to be due to the secretion of a material by the myocardium, in an appropriate nutrient, capable of stimulating the fibres to contract; it is formed continuously, accumulates in the muscle cell during its pause and excites the heart to contract by the use of its whole store. Whether this substance acts by the intervention of nerve fibres or directly upon the muscle cell is still undecided. By the cooperation of the other functions of the heart muscle a rhythmic character is given to its accumulation and destruction.

(3) *Excitability*. After the contraction of heart muscle it is no longer susceptible to stimuli but its power of receiving stimuli begins to be restored at once and it is soon ready for another response. The integrity of these two functions—stimulus production and excitability—will, therefore, determine the rhythm of the heart's contractions, in conjunction with conductivity which has already been considered.

(4) *Contractility* depends upon the nutrition of the myocardium in no small degree. Heart muscle contracts with all the energy available at any given time, so that it is "all or nothing."

(5) *Tonicity* is the property of heart muscle which keeps it from relaxing entirely after contraction. This gives the heart an elasticity to varying demands and a reserve power.

Clinically these various functions may be found to be interfered with, altering the *pulse rate* or the *force of contraction*. Absolute knowledge of this interference is best obtained by means of instruments of precision, such as the electrocardiograph or polygraph. For clinical use the latter is of considerable value in the recognition of these conditions. (See Fig. 2 for interpretation of tracings.)

Digitalis, in susceptible individuals or when used in too large doses or for too long a period, may produce an arrhythmia which is analogous to that which is seen from pathologic interference in the conducting pathway, such as cardiosclerosis, gumma, tumor or ulcerative endocarditis involving this structure, or any other condition interfering with the conduction of the contraction impulse. When arrhythmia appears in a patient under digitalis medication, and with a previously regular heart action, the cause is often due to digitalis block. I have observed it in six patients and have convinced myself that this was so either by the use of the electrocardiograph or polygraph.

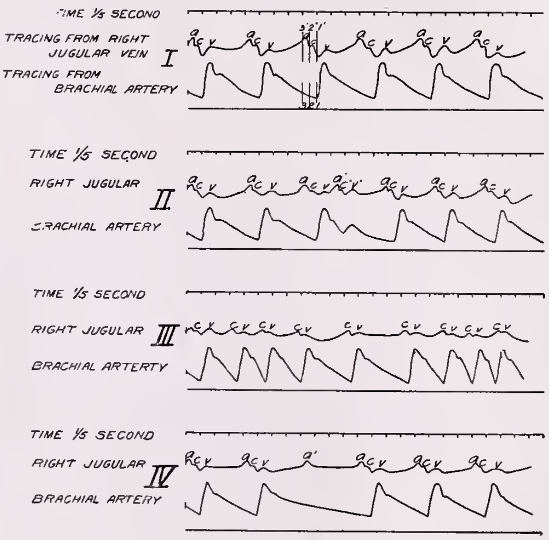

Fig. 2.

1. Normal venous and arterial tracings recorded from the jugular vein and brachial artery; read from left to right. Time intervals are 1/5 second. Note the three waves in the jugular ("a," "c," "v,") to each arterial pulsation. To determine the identity of these waves, proceed as follows: place the left leg of a drawing compass on the base line or beginning of the brachial tracing; then place the right leg of the compass at the beginning of any rise, as (1) and draw a line. Lay off the same distance from the base line in the jugular tracing and the right leg of the compass will fall at (1′). This is the beginning of the "v" wave. Measure 1/10 seconds to the left of this and draw lines (2) and (2′). This is the beginning of wave "c". Measure 1/10 seconds to the left of this and draw line (3) and (3′). This is the beginning of wave "a." "v"= ventricular contraction.

II. Auricular extra-systole. At "x" in brachial tracing, note small extra beat. In the jugular are a′, c′, v′ occurring normally except that a′ occurs sooner after the preceding a, c, v, than normal.

III. Auricular fibrillation. Note the absence of "a" in the jugular.

IV. Heart block. Note the a′ in jugular with no beat in the brachial. The auricle has contracted, but the ventricle has not.

Just how this blocking effect is produced is not clearly understood, but it is probably by direct action on the cardiac muscle, depressing conduction and through stimulation of the inhibitory fibres in the vagus. This effect is more easily understood by a study of the accompanying figure in which we note that some inhibitory fibres of the vagus are distributed to the muscle of the auricle and ventricle and also to the auriculoventricular node and bundle. Therefore, if the vagus be stimulated, the heart rate is slowed by the inhibitory influence, and conduction may be decreased by a depressing action on the auriculoventricular node and bundle. (See Fig. 3.) *Stimulus production* and *excitability* may be normal, so that the auricle contracts with normal rhythmicity but, since the impulse does not pass through the pathway, the ventricle does not respond and the pulse becomes irregular. Sometimes this condition may be recognized with the stethescope or hand by hearing or feeling the auricular contraction, without the subsequent contraction of the ventricle.

When this condition appears in a patient under digitalis medication we have passed the therapeutic stage of action of the drug, in which the rate is slowed through lengthened diastole and the force of contraction is increased, and have reached the stage of irregularity.* Then the rate is usually increased, rhythm partially disturbed through too frequent impulses from auricle to ventricle for response on the part of the latter, and the heart may next pass into the stage of complete dissociation (or complete heart-block), when the ventricle no longer responds to stimuli from the auricle but takes on a rhythm of its own.

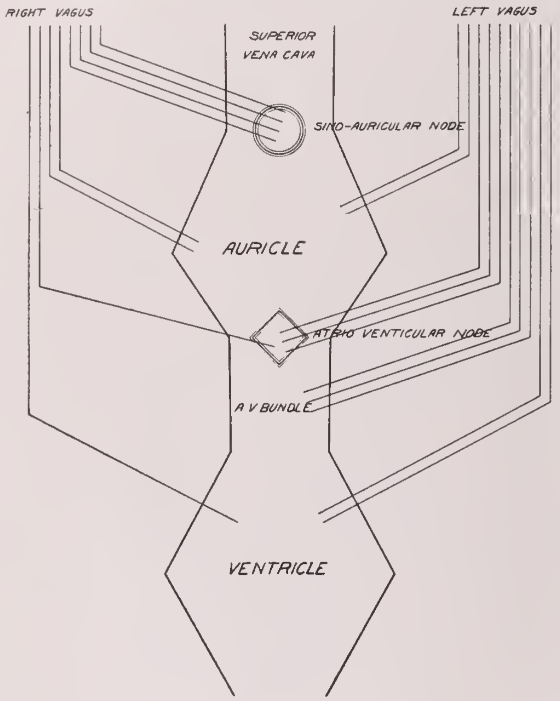

Fig 3.
Showing distribution of vagus to conducting pathway and to musculature. (After Cohn.)

In digitalis, then, we possess an invaluable remedy but a two-edged sword; when abused, disastrous results ensue. If arrhythmia appears under its use it must be stopped at once and, if block be recognized, atropin may be used to advantage, since this drug paralyses the inhibitory terminals of the vagus and thus removes a factor in its production.

While it is not within the scope of this paper to consider the indications for the use of digitalis, a word on this point may be said. It is true that digitalis has no effect on the normal heart, as first pointed out by Fraenkel, Schwartz and Cloetta. The same is true in the compensated heart when valvular lesions are present with no dilatation. One reason for its frequent employment is its remarkably satisfactory effect in arrhythmia, the explanation being that 50-60 per cent. of all irregularities are due to fibrillation of the auricle, in which condition it should be used in large doses to the point of tolerance. In other forms of irregularity it is the worst drug which could possibly be used, as in extrasystole, partial heart block or decreased conductivity, etc.

Much too frequently this powerful drug is used indiscriminately; for example, as soon as valvular lesions are found, regardless of the state of compensation, or for such a symptom as precordial pain. Just as often, perhaps, it is discontinued before the therapeutic effect is obtained, in cases needing it.

The one indication for the use of this drug is *dilatation*, when the myocradium still has some reserve power. In the severest forms of cardiosclerosis or fatty degeneration it may stimulate the fibres to the limit of their power and thus do actural harm.*

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*The action of digitalis may be tabulated as follows:

1. On the vagus, (a) centrally, (b) peripherally, (c) diminished conductivity partially through vagus influence.
2. On the myocardium; increases irritability, contractility and tonicity; diminishes conductivity by direct action on the cardiac muscle.
3. On the peripheral vessels; constriction.
4. Coronary vessels; constriction.
5. On the kidneys; producing diuresis, probably from increased blood flow.

The stages of the action of digitalis are given by Cushny as follows:

1. Therapeutic. Rate slowed, blood pressure increased through increased force of contraction. Diastolic vasoconstriction (?) Peripheral and coronary constriction lessened (?)
2. Stage of irregularity. Rate increased, rhythm disturbed from increased impulses from auricle to ventricle. Independent ventricular rhythm may follow.
3. Incoordination. Very irregular in force and frequency of both auricle and ventricle. Absolute heart-block and death may follow.

That there is value in its *tonic use* has been shown by Schmoll (*Am. J. M. Sc.*, Jan., 1911), who points out that the tonicity of the heart is directly influenced and the contraction is best when the heart is slightly stretched. According to him digitalis may be used over long periods of time, as shown by Traube, Bälz and Kussmall. There are two groups of cases in which this is advantageous: (1) valvular lesions of rheumatic origin, (2) myocarditis and arteriosclerosis where slight cardiac stimulation is indicated. The danger point may be ushered in by the appearance of coupled beats or gallop rhythm.

In the cases studied as a basis for this paper the heart was regular in action and conductivity was normal before digitalis was used. In some the blocking effect was produced with less of the drug than others. In other cases, where conduction was found depressed, digitalis still further produced this effect, even to the point of partial and, in one case, of complete block. In one the block occurred with severe symptoms of collapse, where an unfamiliar form of digitalis was used. Often the effect was produced when the patients were doing well and it was thought that the effects of digitalis were satisfactory. In none of them were results disastrous, conditions rapidly improving when the drug was discontinued, and after a period of rest in its use it was given again with good results.

Conduction was depressed by digitalis in several other cases but when this was recognized the drug was stopped. It is likely that, if it had been continued, these cases would also have passed into block.

The cases are briefly summarized as follows:

Case 1. J. P., age 17., male. Mitral insufficiency, marked decompensation with cyanosis and edema of the ankles, dyspnea, liver three fingers breadths below the costal margin, heart enlarged to the left, apex in the sixth space 2 cm. outside the nipple, rhythm regular, pulse 120. Tracings showed normal conduction.

Infusion of digitalis in ½ oz. doses every four hours during the day for fifteen doses; on the third day marked improvement in the general condition, pulse regular, 90. On the fourth day alternating pulse observed and some nausea; digitalis discontinued. On the fifth day pulse irregular; tracing shows occasional block. In the next two days there was occasional irregularity due to heart-block; on the fourth day afterward pulse was regular, condition good and conduction normal.

Case 2. Male, age 18. Mitral insufficiency, cardiac dilatation with moderate relative tricuspid insufficiency, moderate decompensation. Pulse was irregular on admission, which tracing showed was due to auricular extra-systole.

Infusion digitalis, ½ oz. every four hours, was ordered during the day for twelve doses. On the third day there was evidence of improvement, heart more regular, digitalis stopped. On the fifth day there was occasional drop of beats in the radial pulse, which tracing showed due to block. On the tenth day there were occasional auricular extra-systoles but conduction was normal.

These two patients showed the poisoning effects of digitalis on the heart and prompt recovery when it was withdrawn; the effects of the drug were generally beneficial.

Case 3. B. K., age 22, female. Mitral insufficiency with marked decompensation due to digitalis before admission to the hospital. Tracings showed occasional heart-block. Digitalis was discontinued. On the fourth day pulse became regular, conduction normal.

Case 4. J. F., male, age 46. Mitral insufficiency with considerable decompensation, relative tricuspid insufficiency, pulse irregular, which tracing shows due to auricular fibrillation.

Infusion digitalis, ½ oz. every four hours during the day, was ordered for twelve doses. On the third day there was marked improvement, pulse regular. Five more doses of digitalis were ordered and on the seventh day pulse rate was slower and less irregular. Tracings at this time showed occasional strong auricular contractions and there were still evidences of fibrillation, as shown by occasional absence of A waves. Digitalis was stopped for five days and then started again in the original dosage. After eight days tracings showed occasional block. Digitalis was discontinued and five days afterward there was no evidence of block.

Case 5. F. S., female, age 38. Chronic valvular disease dating from acute arthritis ten years ago. Heart fairly compensated. Mitral insufficiency and soft aortic systolic murmur. Patient under observation for past six months, not confined to bed. At present marked decompensation and auricular extra-systole.

Infusion digitalis ½ oz. dose every four hours, ordered during the day for twelve doses. On the fifth day occasional block noted in tracings, which later cleared up.

Case 6. H. R., age 23, female. Pericarditis with effusion and endocarditis. Under observation two months with occasional courses of digitalis. Compensation again becoming embarrassed, digitalis in tablets (standardized, Brunengra-

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(*Hirschfelder, Dis. Heart and Aorta, page 174.)

ber) was given three times daily (gr. 1) for ten doses. Heart became irregular, nausea and vomiting. Tracing showed block. Digitalis discontinued and block disappeared.

CONCLUSIONS.

From the foregoing observations we may conclude that: (1) Digitalis is a drug which must be used with the greatest caution and with constant vigilance for the detection of its harmful effects.

(2) Irregularity of the heart under digitalis may be due to coupled beats, depressed conductivity or heart-block.

(3) Even when digitalis has been used to the point of producing heart-block the heart frequently recovers when the drug is discontinued.

(4) Its beneficial effect in auricular fibrillation is remarkable; but its use in other forms of arrhythmia may result in harm rather than good.

GRAPHIC STUDIES IN CARDIAC ARRHYTHMIA-ECTOPIC SYSTOLE.*

By M. H. Tallman, M. D.
BOISE, IDA.

Irregularities in the cardiac rhythm are of frequent occurrence and their presence is so easily recognized by both physician and patient that it is necessary to have a clear understanding of their cause, mechanism and significance. While it is true that many serious heart lesions are associated with arrhythmia, there are many cases of irregular cardiac action which are disturbances of function and have no special significance.

We will briefly review the normal mechanism of the heart beat. The heart muscle has the special properties of stimulus production, excitability, contractility, conductivity and tonicity. Areas of specialized function appear, the primitive cardiac tube being the chief site of stimulus initiation and stimulus conduction, the more excitable portion being in the venous, or sinoauricular node, located where the coronary sinus empties into the right auricle. With a normal conduction system, stimuli rising at this point produce a normal or sinus rhythm; when from any cause other portions of the primitive tube becomes more excitable than the sinoauricular node, stimuli arising at these points produce contractions with abnormal rhythm. Irregularities due to depression, failure of conduction power and complete or partial block of the conduction system will not be considered in this study.

Ectopic or extra-systoles are limited to those premature contractions of the auricle and ventricle in response to a stimulus from some abnormal location in the heart but where otherwise the normal sinus rhythm is maintained.[1] The types of ectopic systole encountered are ventricular, auricular and nodal.

Ventricular extra-systole is recognized by the occurrence of a premature systole of the ventricle caused by a stimulus arising in the a-v bundle beyond the a-v node, plainly detected with the stethoscope or a sphygmographic tracing from the apex, and usually perceptible at the radial pulse, although the contraction may be so slight as to fail to deliver a pulse wave. It may occur only at rare intervals or it may occur regularly after every first, second, third or more normal beats.

The ectopic beats are always of shorter duration, lower pressure, and smaller volume than normal. They do not interfere with normal auricular rhythm and are usually followed by a long pause. The pulse period preceding and succeeding the ectopic systole, when taken together, should equal double the normal pulse period. This accounts for the skipping or dropping of beats complained of by patients. This must not be confused with heart block, nodal rhythm and pulsus alterans. The post-extra-systolic wave is usually compensatory, of higher pressure, and greater volume than normal, although Vinnis[2] reports a case of staircase phenomenon following extra-systole. Of more rare occurrence and simpler form is the interpolated ectopic ventricular systole. This type is different in that they do not interfere with the normal sinus rhythm. Electrocardiographic studies by Dresback and Munford demonstrated that in their case the stimulus initiation of the interpolated extra-systole was in the right branch of the a-v bundle.

Auricular extra-systoles have their stimulus in the primitive tissues of the auricular musculature, the premature contraction extending through the a-v conduction system, causing a premature ventricular systole. The stimulus arising in the auricle produces a retrograde stimulus to the sinoauricular node, exploding its excitability and, instead of a compensatory period as in ventricular extra-systole, the normal sinus rhythm takes on a new cycle. The auricular post-extra-systolic sequence of contractions begins with the exploded stimulus which initiates the normal sinus rhythm. The exception to this rule is not uncommon, the post-extra-systolic beat being fully compensatory.

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*Read before the Twenty-second Annual Meeting of Idaho State Medical Association, Boise, Ida., Oct. 8-9, 1914.

1. Mackenzie. Diseases of the Heart. Chap. XIX, page 48.
2. Vinnis. Heart. Vol. IV, No. 2, page 123.

In auricular extra-systole, diastole is shortened, causing depression of conductivity with a slowing of the stimulus wave and a lengthened presphygmic interval. The a-c interval is always prolonged in this condition.

The differential diagnosis between auricular and ventricular ectopic systoles cannot be made clinically without instrumental means. Jugular tracings are necessary, for in auricular extra-systole we find the premature "a" wave followed by its ventricular premature systole, the post-extra-systolic cycle being usually not compensatory as above stated. In ventricular extra-systole there is an absence of the associated "a" wave. The normal "a" wave following ventricular extra-systole is maintained but its stimulus is lost in the refractory ventricle.

Synchronous premature contractions of the auricles and ventricles occurring in an otherwise normally acting sinus rhythm have been found to have their stimulus in a hypersensitive junctional tissue, located between the auricles and ventricles. All premature contractions arising in this area are termed by Mackenzie "nodal" extra-systoles, and are determined only by the use of instrumental methods.

The normal a-c interval in the jugular tracing measures 0.2 seconds. In nodal ectopic systole the a-c interval is shortened to less than 0.1 seconds, in many cases the a-c interval being nil, the "a" and "c" curves appearing as one tall wave due to the contraction of the auricle on the closed auriculo-ventricular valves.

The clinical manifestations of the ectopic systole are both subjective and objective. Subjectively they may be of such a slight nature as to fail to attract the attention of the possessor until accidentally, through feeling his own pulse or through the service of his physician, he becomes aware that he has an arrhythmia. Other patients complain of the long post-extra-systolic pause, stating that the heart stops beating or skips a beat. Syncope is a rare complication and its occurrence should lead to extensive investigation of other possible causes of arrhythmia.

Forceful striking of the post-extra-systolic beat against the chest wall often brings the patient to our service for palpitation of the heart. Occasionally precordial distress, as of oppression or a gripping at the throat, is experienced. Ectopic systole never causes grave cardiac symptoms unless large numbers of frequently recurring extra-systoles are present, when the patient may develop dyspnea, especially of effort type, vertigo, rarely syncope, slight cyanosis, and these when present, are usually the result of serious cardiac lesions to which the premature contractions may be attributable.

Inasmuch as the use of the special instruments of precision in recording intra-arterial and intravenous pressure waves is restricted and not generally utilized, because of the unwieldly and complicated nature of the mechanism, we will point out the principal clinical symptoms which will assist in differentiation in the various types of ectopic systole. In our own work we use the Mackenzie polygraph, by which we are enabled to make exact diagnoses in cardiac arrhythmias, the importance of which is at once apparent.

Premature beats arising in the ventricle are best detected by palpation and auscultation of the apex. The force of the premature apex thrust is weak; the preceding diastolic interval is shortened, while the succeeding rest is greatly lengthened. The two when taken together just equal two normal cardiac cycles. Premature contractions may or may not open the aortic valves. The radial pulse may present a weak premature pulse or merely a long pause. Heart sounds depend upon the strength of the premature contractions and the associated valvular conditions. Extra-systoles of sufficient force to open the aortic valves are accompanied by the first and second heart sounds; feeble contractions produce only the first sound. Extra-systole arising after every second beat produces the pulsus bigeminus, after every third beat pulsus trigeminus. Halved heart rate is due usually to interpolated extra-systole.

Auricular and nodal extra-systoles are difficult to determine without full instrumental means. Premature contractions originating in the auricle produce a disturbance in the sequence of the normal sinus rhythm, making the subsequent sinus beat premature with the resumption of the normal rhythm. Synchronism of the a and v beat causes regurgitation into the neck veins from the right auricle. These are observed to be simultaneous with the apex thrust.

Extra-systole may occur at all ages, being rare before 10 years of age, common after 50. Little is known regarding the cause of premature systole.

Extra-systoles are induced by the application of irritants directly into the heart muscle, by clamping the great arteries or veins, by ligating branches of the coronary artery, by the injection of digitalin, aconitin, muscarin, or adrenalin, by increased intracardiac pressure, and altered cardiac nutrition. Degenerative changes in the myocardium are important factors in the production of points of abnormal stimulation. Nervous and psychic influences are especially provocative of benign types of ectopic systole.

The present tendency to minimize the significance of ectopic systole is giving way to a more guarded estimate of its value as a symptom of cardiac disease. It is granted that many cases presenting extra-systole of more or less severity and extending over many years may terminate without any signs of cardiac embarrassment, yet it must be admitted that any disturbance of one of the fundamental functions of the heart muscle, viz., excitability, is of more than passing concern. Extrasystoles are very common symptoms in the serious degenerative changes in the myocardium and pathologically are classed with such grave conditions as paroxysmal tachycardia, nodal rhythm, auricular flutter, and auricular fibrillation.

The treatment of ectopic systole without evident cardiac pathology is limited to reassurance and an explanation of the modus operandi, which in most cases is sufficient. A limitation of the usual habits is necessitated only when distressing symptoms are caused. Organic lesions with failing compensation, associated with extra-systole, demands the usual treatment, while the presence of persistent ectopic systole is evidence of threatened dissociation and energetic treatment should be employed.

There is no drug known which will influence the prevalence of ectopic systole. Nervous and excitable patients are frequently benefited by large doses of bromides. Digitalis is contraindicated in most cases, excepting only in cases of impending decompensation due to valvular insufficiencies and cardiac dilatation. 614-615 Overland Bldg.

Standardization of the Surgeon. J. M. T. Finney, Baltimore (Journal A. M. A., Oct. 24, 1914), discusses the questions of what should be the qualications of the surgeon, physical and mental, his training, moral and professional standards, etc. The present conditions, he thinks, cannot continue; the public will demand a higher standard and higher ideals in our profession. He especially criticizes surgical practice by the untrained, the tolerance of practices like fee-splitting, and excessive fees without proper regard to the patient's circumstances.

REPORT OF CASE OF TRACHOMA TREATED WITH BACILLUS LACTIS BULGARICUS.*

By C. R. Hudgel, M. D.,

BOISE, IDA.

The intractability of trachoma and its resistance in some cases to all forms of treatment is indicated by the large number of remedies and measures recommended by the text-books. Any one treating trachoma, especially in the second stage, is naturally forced into empiricism. While he waits for some new word from the laboratoory the patient is begging for relief, so he racks his brain for expedients and searches the journals for new drugs and methods.

Last spring, having a patient in the second stage of this disease with marked exacerbation of all the symptoms. I remembered having read in the *Journal of Ophthalmology* a short article from a physician in general practice, giving the history of a case of trachoma in the second stage, which he had treated with the Bulgarian bacillus. The patient refused to go to the city to a specialist so he had the child's parents procure a supply of Bulgarian tablets. Twice daily some member of the family would reduce a tablet to powder and pour it into the patient's eye. The results were remarkable. The erosion of the cornea, pannus, photophobia, lacrymation and the congested condition of the lids disappeared. The eyes cleared and the vision improved greatly. No other remedy was used. When the article was written the patient was still being treated.

My patient was a young man of twenty. He had had trachoma for five years. I had treated him before and been able to relieve him. He had been out of the city for a year doing ordinary day labor. The condition of his eyes was such that he had to be led around by his brother. The pannus and infiltration of the cornea of each eye was so great that one could hardly discern the pupil; besides there was ulceration of each cornea and iritis was also present. The inflammatory symptoms of the lids were marked. The epithelial tufts under the upper lid were large and vascular. There was great photophobia and lacrymation.

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*Read before the Twenty-second Annual Meeting of Idaho State Medical Association, Boise, Ida., Oct. 8-9, 1914.

Knowing his case to be a very stubborn one under the regular methods of treatment, I determined to give the Bulgarian bacillus a trial but did not feel justified in using this remedy alone. I observed afterwards that the time limit, as marked on the bottle of Bulgarian tablets which I procured, had run out but the bacilli evidently had not lost their virility, as events proved.

My method of treatment was as follows: One per cent. atropin once daily; hot fomentations three times daily; twice during the course of treatment I turned the lids back and scarrified them thoroughly with a small bistoury. They bled freely. Twice daily I reduced to powder a tablet of the Bulgarian bacilli and dusted it upon each everted lid. No astringents or other remedies were used. The improvement was marked from the start. The copious lacrymation was checked at once and the patient said his eyes felt much cooler and easier. The ulcers healed and the pannus gradually disappeared. The improvement of his vision kept pace with the amelioration ot the various phases of the disease. When I discharged him two weeks after commencing treatment his vision with correction was 15/20. His eyes were clear and he said they felt free from irritation.

The two other cases were practically repetitions of the one I have just given, as far as symptoms and treatment were concerned. One was Miss G——, a young lady of twenty-two. She had contracted the disease six years before. As in all cases of trachoma she had what she called "good and bad spells" with her eyes. She was certainly having a bad spell at this time. There was pannus and infiltration of each cornea but no ulceration. She was discharged in three weeks, all active symptoms having subsided.

The last case was that of Mrs. R——, a lady of thirty-five. The disease, as far as I could learn, was of four years standing. She was anemic and had a deep ulcer on the right cornea. She responded quickly to treatment and all active symptoms disappeared. The vision of the right eye, however, did not improve much because the healing of the ulcer left a corneal opacity.

The treatment of all three cases was practically the same except that the last patient in addition was given blaud's mass and strychnia, and the ulcer was scraped and cauterized.

The number of cases here given is entirely too small to form any definite conclusion as to the real worth of this remedy in trachoma, but the hope is expressed that it will prove of value in the hands of others in treating this obstinate and distressing malady.

CORRESPONDENCE.

AUTOSEROTHERAPY.

To the Editor:

Although somewhat tardy, I trust that you will accept my comment relative to the paper, Autoserotherapy, by Dr. E. A. Pierce, published in your August number. In connection with the reference to autohemotherapy (Krokiewicz), an article by Donald Macfarlan, B. S., M. D., of Philadelphia, Hahnemann Monthly, September, 1914, is of interest. In diabetes mellitus, with the internal administration of a dilution of the patient's blood, Macfarlan shows results in a thoroughly scientific report of cases, without other therapeutic measure, and on a moderate sugar and starch diet.

Dr. Pierce's conclusion establishing "the practicability of autoserotherapy in treatment of nonpurulent effusions," has my hearty commendation and I would ask, why not disembowel the term and try autotherapy in purulent exudates, infections, etc.? His able article well shows that a specific antigenic body resident in sterile exudates is the spur necessary to the lowered vitality for a cure of the cause of pleurisy, for instance. I am sure the principle is the correct one and its extension to purulent fields is readily attained by isolating the "specific antigenic body" from purulent exudates. Duncan, of New York, best does this by adding one part of the patient's pus to seven parts of water, allowing to stand, with occasional thorough agitation of the mixture, and passing through a Berkefeld filter after twelve to twenty-four hours, when one cc. of this filtrate is injected subcutaneously, or the smallest necessary dose as indicated by the reactive strength and condition of the patient.

At the Sellwood Hospital we have wide and favorable experience with Duncan's teaching in many varieties of infection, even to long standing chronic bronchitis, and I have to refer you to Autotherapy, New York Medical Journal, Dec. 14 and 21, 1912; Autotherapy in Purulent Infections, The American Practitioner, Sept., 1913; Autotherapy in Surgery, American Journal of Surgery, Oct., 1913; Traitement Radical de la Bronchite Chronique, Paris Medical, Jan., 1914; and numerous other classic writings of C. H. Duncan, M. D., the most ingenious of autotherapists.

Portland, Ore. John Besson, M. D.

A. E. ROCKEY, M. D.,
Portland, Ore.
President Oregon State Medical Association, 1914-1915.

C. W. SHARPLES, M. D.
Seattle, Wash.
President Washington State Medical Association,, 1914-1915.

J. W. ALLEY, M. D.,
Lapwai, Ida.
President Idaho State Medical Association, 1914-1915.

R. S. JOYCE, M. D.,
Ogden, Utah.
President Utah State Medical Association, 1914-1915.

NORTHWEST MEDICINE
The Journal of the State Medical Associations of Oregon, Washington, Idaho and Utah.
Devoted to the Interests of the Medical Profession of the Pacific Northwest.
Editorial Office, 719-22 Cobb Building, Seattle, Wash.
NOVEMBER, 1914.

EDITORIAL

LAST MONTH'S BOISE MEETING.

The Idaho state meeting of last month was the best attended and in several ways the most satisfactory held for some years.

The program was especially interesting because presenting for discussion so large a number of questions relating to the more recent developments in both medicine and surgery. It was very gratifying to note the number and character of papers read by Idaho men. We always appreciate our visitors and they never fail to bring something worth while in but, if the association is to grow and be what it should to the profession of the state, the members themselves must show their interest.

This meeting was also marked by better attendance at all sessions than any in recent years, so that the prospects for the future of the association are very encouraging. Our population is rapidly increasing and many new medical men are coming to the state. It is hoped they will bring new life and interest to the association. The most encouraging feature of this meeting was the good attendance despite the absence of any outside attractions, such as state fair or fall festival, which shows that these things are apt to be a hindrance rather than a help. J. M. T.

MEDICINE MADE IN AMERICA.

Whatever may be one's belief as to the responsibility of the terrible European war and whichever of the contestants one's prejudices may favor for ultimate victory, we are all united in admiration for the marvelous progress in all branches of science, art and literature made by the Germans in the last two decades. Such wonderful advances have been made by the genius of that nation in the various branches of industry that the legend, "made in Germany," is a warranty the world over of full value and efficiency. In no branch of science has more commanding progress been made than in the development of the art of medicine. The supremacy of German teachings is so overpowering in the United States that of late years the recent graduate has considered his education was incomplete without a course of study in one of the German universities. So predominating has been this belief in the average medical mind that we have to a large extent been blinded to the fact that the American scholars have in some lines equaled their masters and in others surpassed them, so that at present, for all practical purposes, a student can acquire as efficient a training in the leading medical centers of his own country as in the clinics of Europe. In view, therefore, of the probable elimination of European study for an indefinite future period, it is indeed fortunate for the medical training of American students that this grade of perfection has been attained. While the lamentable fact becomes daily more obvious that the supply of many essential and important drugs and medical products may be entirely cut off, owing to our dependence on the German manufacturers, there is no possibility of deficiency in the supply of thoroughly accomplished and efficient medical men. While the slogan, "made in America," is being so enthusiastically fostered in many industrial lines, it can be truly applied to the supply of physicians which is available to meet all the demands of the nation.

PROFESSIONAL ADVERTISING.

The accepted ethics of the medical profession have long frowned upon and condemned advertising in the daily press. Exaggerated claims of superiority in any particular line or egotistical and boastful statements to the public are distasteful to every right-minded physician. For this purpose the daily press is reserved these days for the quack and charletan and any physician whose name thus appears places himself under a suspicion of belonging to this class. At the same time it is commonly recognized that in some proper manner a physician should be given the privilege of announcing to his fellow practitioners that he has qualified himself in some special branch of the profession. It is generally accepted that a legitimate medium to this end is the journal of his state medical association, whose circulation is limited to the profession whom it represents. After due deliberation and consultation with the representatives of the different associations represented by NORTHWEST MEDICINE, it has been decided that the time is fitting for this journal to offer itself as a medium for this kind of advertising to the physicians reached by it. Therefore, beginning with our January issue, we shall devote the necessary space in our advertising pages for carrying the cards of those physicians who desire thus to present themselves to their fellow practitioners. On page 9 of our advertising section will be found further details in this matter, with a subscription blank which can be detached and mailed to the journal as an order for an advertising card.

MEDICAL NOTES

OREGON.

Present at Portland Meeting. The following is the registration list of those present at the Oregon Association meeting at Portland:

W. Amos, A. B. Bailey, A. W. Baird, Portland; J. Ballard, Kelso, Wn.; C. M. Bartell, Portland; T. J. Bartle, Eugene; May L. Barnhart, Portland; W. H. Becker, Sherwood; H. P. Belknap, Jr., Portland; G. C. Bellinger, Salem; A. J. Bender, O. S. Benswanger, N. M. Benyas, A. G. Betlman, J. B. Bilderbach, Portland; A. W. Boslough, Ashland; C. L. Booth, Portland; J. C. Booth, Lebanon; G. S. Boyden, Pendleton; T. M. Brooks, L. W. Brooke, A. J. Browning, L. Buck, Portland; Etha H. Butler, Rochester, Minn.; W. H. Byrd, Salem; J. T. Calbreath, Portland; M. Calusius, Siletz; Mae H. Cardwell, Portland; H. E. Carruth, Yamhill; B. A. Cathey, Condon; A. C. Church, Portland; R. W. Clancy, Medford; O. H. Clarke, Portland; J. Clements, Salem; H. W. Coe, T. H. Coffen, R. C. Coffey, L. H. Converse, Portland; J. H. Cook, McMinnville; W. H. Dale, Harrisburg; T. H. Dammosch, R. T. Davis, Portland; B. T. DeVore, Oakland; J. F. Dickson, Portland; M. M. Ditlebrandt, Cascade Locks; W. H. Edwin, J. E. Else, Portland; J. J. Emmens, Medford; A. M. Erwin, Hillsboro; G. J. Fanning, R. A. Fenton, Portland; C. B. Flagg, Mary B. Flagg, Vancouver, Wn.; C. D. Fulkerson, Chemawa; G. G. Gaunt, Hardman; S. M. Gellert, Portland; J. L. Gilleland, Pilot Rock; W. J. Gilstrap, St. Johns; H. M. Greene, J. G. Grim, W. B. Hare, A. K. Higgs, Portland; T. J. Higgins, Baker; W. B. Holden, W. House, H. W. Howard, A. H. Johnson, Portland; C. W. Jones, Elma, Wn.; N. W. Jones, P. E. Jones, S. E. Josephi, T. M. Joyce, H. I. Keeney, Portland; G. E. Kidd, Quincy, Ill.; A. E. Kidd, Chicago, Ill.; F. A. Kiehle, J. C. E. King, Portland; G. W. King, Helena, Mont.; M. Kirkpatrick, F. B. Kistner, J. R. Klecan, G. T. Koehler, E. J. Labbe, Portland; C. Laffin, Warm Springs; T. J. Laird, J. T. Le Fevre, S. Leob, Portland; W. E. Lewis, Seaside; Esther P. Lovejoy, K. A. J. Mackenzie, Florence S. Manion, J. L. Manion, K. C. Manion, M. B. Marcellus, R. J. Marsh, C. S. Menzies, A. W. Moore, C. C. Moore, J. S. Moore, H. C. Moore, K. P. Moran, Portland; W. B. Munford, Banks; E. Myers, Mary Maclachlan, J. D. MacLaren, L. C. McCabe, F. McCauley, J. M. McGavin, J. L. McCool, J. W. McCollom, C. T. McClure, E. B. McDaniel, A. T. McGinn, Portland; W. B. Neal, Eugene; C. H. Newth, Philamath; A. P. Noyes, R. Nunn, J. C. O'Day, Portland; A. L. Olive, Willamette; C. C. Osborn, Portland; E. O. Parker, Pendleton; H. G. Parker, G. Parrish, P. J. Payne, G. N. Pease, J. A. Pettit, C. D. Piasecki, E. A. Pierce, Portland; E. B. Pickel, Medford; R. J. Pilkington, Astoria; J. O. Pitt, Portland; M. E. Pomeroy, Salem; D. H. Rand, E. A. Rich, L. Ricen, Portland; R. E. Ringo, Pendleton; D. Robinson, Mosier; G. M. Roberts, Wallowa; J. O. Robb, Hillsboro; A. E. Rockey, P. Rockey, Portland; A. H. Ross, Lebanon; J. J. Rosenberg, J. W. Rosenfeld, J. B. Roth, Portland; Mary C. Rowland, Lebanon; C. L. Rytke, C. G. Sabin, W. G. Scott, C. Seaman, L. Selling, W. A. Shea, S. H. Sheldon, Portland; Edna P. Sherrill, Los Angeles; C. A. Smith, Seattle, Wn.; W. C. Smith, Salem; F. E. Smith, E. A. Sommer, W. O. Spencer, R. S. Stearns, Portland; R. W. Stearns, Medford; J. D. Sternberg, Portland; R. L. Steaves, Salem; J. G. Strohm, Portland; R. S. Stryker, Ridgefield, Wn.; T. G. Surdenburg, Ashland; I. C. Sutton, J. P. Tamiesie, Portland; G. W. Tape, Hot Lake; F. M. Taylor, Portland; T. H. Thompson, Salem; A. Tilzer, J. T. Tounley, W. H. Trimble, G. T. Trommald, Portland; Mrs. M. C. H. Turner, (R. N.), Heppner; Mary F. Vanderpool, Vancouver, Wn.; J. C. Vanderwert, Portland; H. W. Vollmer, Forest Grove; W. H. Vose, B. Wade, J. T. Walls, T. W. Watts, A. M. Webster, R. H. Wellington, C. S. White, G. S. Whiteside, Portland; Whiterker, Tacoma; N. E. Winnard, Heppner; Emma M. Wickstrom, Chicago, Ill.; P. W. Willis, W. T. Williamson, L. J. Wolf, S. E. Wright, R. C. Yenney, Portland.

Social Hygiene Society. At the recent meeting of the Oregon Social Hygiene Society, in Portland, the following officers were elected for the ensuing year: Dr. W. T. Foster, president; Drs. C. S. White, Leslie Butler, W. J. Kerr and Judge G. W. Phelps, vice-presidents; Adolph Wolfe, treasurer; Dr. G. N. Pease, secretary; H. W. Moore, executive secretary.

Dr. and Mrs. Ray Matson have arrived in Portland after an absence of nearly a year. They had many exciting experiences on account of the war, at one time being marooned in Vienna for several weeks.

Dr. R. R. McCall, of Dayville, has left for California. He is suffering from tuberculosis but hopes with treatment to regain his health.

Dr. H. J. Cavanaugh, of Albany, has left for Chicago for a year of postgraduate study.

Dr. George C. Knott, of Glendale, has leased the Glendale Sanatorium. The building has a capacity of twenty patients and is said to be strictly modern in all its appointments.

Physicians Married. Dr. Milton E. Karnagin, of Coburg, and Miss Rose Snodgrass were married October 1. Dr. T. W. Ross, formerly of Tillamook, and Miss Kina McKelvy were married October 1.

WASHINGTON.

A Deathless City. Seattle had the unique experience for a city of its size, on September 23, of passing twenty-four hours without a single death, with the exception of a week-old infant who died a few minutes after midnight of the 22nd.

A New Health Society. A society, called the Washington State Organization for Public Health Nursing, has been organized. It is modeled after similar bodies in several of the Eastern states and is designed to "facilitate efficient cooperation between nurses, physicians, boards of trustees and other persons interested in public health measures."

Hospital Enlarged. The Swedish Hospital, of Seattle, has been enlarged by the addition of an adjoining residence which has been connected with the hospital by an enclosed corridor. It has also purchased another large residence and lot, thus making the hospital property a half block.

Medical Banquet. The King County Medical Society, of Seattle, introduced an innovation in the line of entertainment by giving a banquet recently, at which the members who have joined the organization during the year were the guests of honor.

Hospital Burned. The General Hospital, at Port Angeles, has been destroyed by fire of unknown origin. Thirteen patients were in the institution at the time but were moved without casualty.

Prize Essay on Rum. Everybody's Magazine recently offered about 100 prizes for essays on the rum traffic. Over 9000 people competed. The thirteenth successful competitor was Dr. W. McDowell, of Seattle, who received one of the $25 prizes.

Study or Fighting. Drs. R. D. Forbes and E. J. Stubbs, of Seattle, last month left for London, where they may do postgraduate work but probably will enlist in the English Army Medical Corps for service in France.

New Health Officer. Dr. H. J. Felch has been appointed City Health Officer at Ellensburg to succeed Dr. W. L. Jackson, resigned.

Dr. Robert L. Thompson, one of the pioneer physicians of Spokane, has moved to Seattle, where he will make his future home.

Dr. D. A. Nicholson, of Seattle, has been the victim of burglars to the extent of losing a considerable amount of valuable silverware.

St. Joseph Hospital, of Bellingham, recently held graduating exercises, at which a class of six nurses received their diplomas.

Dr. G. R. Bice, of Ferndale, has left for postgraduate work in the East. During his absence Dr. J. Mapes will attend to his work.

Dr. G. W. Wimberly, who for four years has been government physician on the Yakima Reservation, has located in Ellensburg.

Dr. John Hunt, of Seattle, assistant business editor of Northwest Medicine, is spending a year in postgraduate study in the East. His address is 3706 Walnut Street, Philadelphia.

Drs. J. F. McDonald and A. J. McIntyre, of Hoquiam, have returned from an extended trip in the East, during which they visited many of the noted hospitals and clinics.

Dr. and Mrs. W. G. Cassels and Dr. Cora Saxe, of Seattle, who have been on extended trips in Europe and the Eastern states, have returned home.

Dr. A. R. Gould, of Kent, has returned home after several months of postgraduate study in Eastern cities.

Dr. J. M. Gunning, formerly of Portland, has located in Spokane.

IDAHO.

State Medical Examination. At the semi-annual session of the State Board of Medical Examiners only seven applicants presented themselves, which is the smallest number in several years.

Tuberculosis Among Indians. Tuberculosis stands high as a cause of death among the Nez Perce Indians. Dr. John N. Alley, superintendent of the sanatorium on the reservation, states that a thorough study has convinced him that 90 per cent. of all deaths among these Indians is due either directly or indirectly to this disease.

OBITUARIES.

Dr. P. J. Semler died at St. Vincent hospital, Portland, Ore., Sept. 27, from cancer of the stomach. He was born in Schleswig-Holstein in 1859. He moved to California in 1873 and settled in Portland in 1882. Besides practising medicine he always took an active part in politics.

Dr. S. J. Barber died at St. Vincent hospital, Portland, Ore., Oct. 13th, from injuries received from a fall down a flight of stairs at his home.

Dr. H. M. Jones died at Nez Perce, Idaho, Oct. 6, of pneumonia. His former home was in Franklin, North Carolina.

REPORTS OF SOCIETY MEETINGS

UTAH STATE MEDICAL ASSOCIATION.

REPORT OF THE TRANSACTIONS OF THE HOUSE OF
DELEGATES OF THE UTAH STATE MEDICAL
ASSOCIATION, SALT LAKE CITY,
UTAH, SEPT. 29-30, 1914.

SEPTEMBER 29.

Dr. J. F. Critchlow, president, presiding. Dr. W. Brown Ewing, secretary.

Dr. Critchlow: The House of Delegates will come to order. The reading of the minutes will be passed over on account of their being published. You may call the roll.

The roll was called by the secretary, and the following answered present:

Salt Lake County—R. W. Ashley, W. R. Tyndale, R. W. Fisher, H. P. Kirtley, T. C. Gibson, R. R. Hampton, J. E. Tyree, J. F. Sharp, S. G. Kahn.

Utah County—W. T. Hasler, H. S. Payne, J. W. Aird.

Dr. Ewing: There is one alternate here, regularly elected by Salt Lake County, Dr. Bowdle.

Dr. Critchlow: I will entertain a motion to seat Dr. Bowdle.

Motion seconded, put and carried.

Dr. Critchlow: The next is the report of officers. The first is that of the secretary.

Dr. Woodruff: I received my appointment from the Davis County Society as a delegate just this morning. We held a meeting something like two months and a half ago and I supposed this had all been attended to. Whether I am eligible as a delegate or not I don't know.

Dr. Critchlow: I think before that comes up the question of the acceptance of the report from Davis County should be passed upon by the House of Delegates. I will entertain a motion as to whether the strict rule shall be waived, and the Davis County report and delegate be accepted.

Dr. Rich: I move that the rules be suspended and that the Davis County society report be accepted and their delegate seated.

Motion seconded, put and carried.

Report of Secretary.

Dr. Ewing: During the past year no new societies have been organized and the number remains at seven, if Davis County has its suspension removed.

The new provision of the by-laws requiring all reports and assessments of component county societies to be in the secretaries' hands on or before March 31 was not strictly enforced and by consent of the council some latitude was allowed the first year. All societies finally registered a full list of members with the exception of Davis County which has not been heard from. It is hoped that this provision of the by-laws will receive the hearty support of the county societies in the future.

The number of members in good standing at the 1913 meeting was as follows: Cache Valley, 16; Davis County, 6; Salt Lake County, 138; Sanpete County, 11; Uintah County, 5; Utah County, 32; Weber County, 29. Total, 237.

This year the enrollment is as follows: Cache Valley, 13; Davis County, 5; Salt Lake County, 146; Sanpete County, 12; Uintah County, 5; Utah County, 37; and Weber County, 37; making a total of 255, and showing an increase of 18.

The officers of the association feel that a larger membership could be secured if the county secretaries would organize a campaign for new members and not wait for new men to ask for membership. As membership in a component county medical society is the only portal to the American Medical Association, whose splendid work is being more and more appreciated by the profession and the public, it should be considered an honor to belong to such an organization.

Some of the work being accomplished by this organization is "Advancing the interest of scientific medicine, collecting and publishing reliable information regarding medical education, working for reasonably high standards of preliminary and medical education, cooperation with state licensing boards in an effort to secure better and more uniform requirements for license to practice medicine and for an extension of the privileges of reciprocity.

"Through its Council on Pharmacy and Chemistry it is investigating the various medicinal preparations that are being offered to the physicians of the country; it is also exposing the patent medicines, fakes, quacks, etc.

"Through its Council on Health and Public Instruction it is seeking to coordinate the medical profession and the public; to unite all forces working for improvement in health conditions in cities, states and the nation; to enlighten the public on the aims and purposes of the medical profession for the prevention of disease, and to strengthen public confidence in the profession and its work.

"It is publishing the Journal which is practical as well as a scientific publication for physicians. It is working to bring about a better state of affairs among the members of the profession. In brief, its work is wholly altruistic and for the good of the public and the medical profession."

The various resolutions passed by the House of Delegates at its last meeting were immediately forwarded and the routine business of the association has been carried on as usual.

Since the last meeting your secretary has attended two conferences of state secretaries, one at Chicago, Feb. 25, 1914, and one at Atlantic City in June. Considerable time was taken up at these meetings and a great majority of the states were represented.

The meeting at Chicago was held at A. M. A. headquarters and was presided over by the secretary, who stated that the object of the meeting was "for the purpose of giving mutual assistance in solving the problems of secretaries of state associations." The main topics of discussion were, "Uniform Regulation of Membership," "Organization, How Can It Be Perfected," and "Medical Defense."

The changes made in our by-laws last year have been endorsed by nearly every state and will go a long way towards simplifying the transfer of physicians from county to county, and from state to state.

Another point that has been brought forward at these conferences is, "Should constituent state associations hold charters from the American Medical Association?" This matter will be presented to you by the council with recommendations.

The Public Health Sunday was continued at the Atlantic City meeting of the American Medical Association and many of the Philadelphia churches were supplied by visiting physicians; your secretary delivered an address in the Germantown Baptist Church on public health topics.

This part of the altruistic labor of the A. M. A. is under the direction of the Council on Health and Public Instruction, and is gradually enlarging and attracting more public attention and favorable comment from the daily press.

Very little work has been required of the various standing committees during the year except the Committee on Scientific Work and the Committee on Arrangements, whose report is herewith presented.

The two committees, on which has devolved the greatest amount of work, have performed their work faithfully and are deserving of your commendation.

Besides the routine work of the council, the secretary has asked this body to consider many subjects that were considered important and for their report, which will be presented to you, I bespeak your very careful consideration.

During the year only two members of the council have resided in the state and I ask your consideration of the advisability of declaring the second councilor district vacant, and an election to fill the unexpired term. The president appointed Dr. Howard P. Kirtley as fraternal delegate to the meeting of the Colorado State Medical Society.

The following officers are to be elected: President, three vice-presidents, secretary, treasurer and councilor for the first district (to serve three years).

To the council, officers and all committees who have assisted in carrying on the work of the association, I extend my sincere thanks.

All of which is respectfully submitted,

W. Brown Ewing, Secretary.

Dr. Critchlow: Gentlemen, what will you do with the report?

Dr. Ewing: It has been the custom heretofore to turn over all reports of officers to a Reference Committee on Reports of Officers of the Association.

Dr. Critchlow: That committee is one of appointment by the chair, as I understand it, and the chair will appoint Drs. Ashley, Pearse and Aird to constitute that committee, to which this report of the secretary will be referred. The next report is that of the treasurer.

Report of Treasurer.

To the officers and members of the Utah State Medical Association:

I herewith submit my report for the fiscal year:

Receipts.

Balance reported Sept. 23, 1913	$781.52
Received from all sources	781.25
	$1562.77

Expenditures.

Vouchers Nos. 30 to 50 inclusive, and approved by the councillors	$873.87
Balance on hand Sept. 29, 1914	688.90
	$1562.77

Respectfully submitted,

H. P. Kirtley, Treasurer.

This report will be referred to the Committee on Reports of Officers. The report on Public Education is next.

Dr. Ewing: No report.

Dr. Critchlow: The next is the Committee on Medical Education.

Dr. Ewing: No report.

Dr. Critchlow: The next is the report of the Committee on Scientific Work.

Report of Committee on Scientific Work.

Dr. Ewing: Your committee on Scientific Work begs to report that they met in March in conjunction with the president, Dr. J. F. Critchlow, Councilors R. S. Joyce and H. G. Merrill, at the Alta Club, in Salt Lake, and formulated a tentative program. We again met in May at the Weber Club, in Ogden, received a report from the secretary and completed the work.

We selected the men to read papers and allotted seven to Utah and six invited guests, making fewer papers than heretofore and, expecting more discussion, thereby enhancing the value of each paper to the society. We also arranged for one afternoon of clinics and have endeavored to have supplied cases both interesting and instructive.

The result of our efforts is before you in the shape of the Twentieth Annual Program, which has been mailed to each member of the association.

We also notified by mail each physician who had been selected to open the discussion of the several papers and hope they will comply with our request.

Respectfully submitted,

Sol. G. Kahn, Chairman.

Dr. Critchlow: This report just read will be referred to the Committee on Reports of Officers. The next is the report of the Committee on Public Policy and Legislation.

Dr. Ewing: No report.

Dr. Critchlow: The next is the report of the Committee on Necrology.

Dr. Ewing: No report.

Dr. Critchlow: The next report is that of the Committee on Arrangements.

Report of Committee on Arrangements.

Dr. Ewing: Your Committee on Arrangements desires to report that it has secured the roof garden of Hotel Utah for our scientific sessions and banquet. For those having papers requiring the use of lantern slides or Röntgenogram illustrations a large room on the second floor, which can be well darkened, has been secured.

Prior to 1913 the annual banquet had been given under the auspices of the county society of the county in which the state association met. The last two years it has been given under the management of the state association. This change has proven a wise one, as the attendance has largely increased.

T. C. Gibson, Chairman.

Dr. Critchlow: That report will be referred to the Committee on Reports of Officers. The next subject to be considered is the amendment to the constitution and by-laws, presented at the meeting of 1913.

Dr. Ewing: The amendment was as follows: "Article 9. Officers. Section 2. After the word 'Councilors' insert 'and the secretary, (who shall be elected for three years).'" According to the requirements of our by-laws the proposed amendment had to lay over for a year and it was published twice during the year in the official organ of the association, appearing in the numbers for April and May, 1914.

Dr. Critchlow: This amendment will be submitted to the House.

Amendment carried.

Dr. Critchlow: In regard to the declaration of a vacancy in the office of councilor in the second district, Dr. Smedley, former occupant of that office, has left the state and, unless there is objection, the chair will declare that that vacancy exists, and that is shall be filled by regular procedure of the House of Delegates at tomorrow's session.

Dr. Ashley: In order to make that official, I will move you that we declare that office vacant.

Motion seconded, put and carried.

Dr. Critchlow: The motion is carried, and the vacancy declared. The next is miscellaneous or new business.

Dr. Ewing: I have here a memorial to the House of Delegates. To the House of Delegates of the American Medical Association:

Whereas, the secretary of the constituent state associations is, by reason of his official position, most familiar with the needs of the profession in the various states; now, therefore, be it

Resolved, That the Utah State Medical Association, in convention assembled, petition the House of Delegates of the American Medical Association, to so amend the constitution and by-laws as to make the secretary of each constituent state association a member of the House of Delegates, ex-officio.

(Signed) Utah State Medical Association, by W. Brown Ewing, secretary.

Dr. Ewing: I might say in explanation of this, it was brought up in the last meeting, or last convention, of secretaries and favored by them. It would only add to the number of the House of Delegates of the American Medical Association about forty-eight names. Of course, the final action depends entirely on the House of Delegates of the A. M. A. It is simply a petition to them to make that change in their by-laws.

Dr. Kahn: I move the adoption of the resolution and that it be forwarded to the proper channel.

Dr. Merrill: I second the motion.

Motion put and carried.

Dr. Critchlow: The next is the report of the fraternal delegate.

Report of Fraternal Delegate.

"To the House of Delegates, the Utah State Medical Association:

"I have the honor to report that, as your fraternal delegate to the recent forty-fourth annual convention of the Colorado State Medical Society, I had the privilege of reading a paper before that society in Boulder, Colo., on Sept. 9.

"As your representative, I was very cordially received by the president, Dr. O. M. Gilbert, and his officers; and had the opportunity of meeting the delegates and hearing addresses by the following fraternal delegates from other states: Hideyo Noguichi, New York; L. B. Wilson, Rochester, Minn.; L. S. Peters, New Mexico; M. L. Graves, Texas and A. C. Stokes, Nebraska.

Fraternally yours,

"H. P. Kirtley."

Dr. Critchlow: The report will be referred to the Committee on Reports of Officers. The report of the council is now in order.

Report of Council.

To the House of Delegates: The councilors have met five times with the officers of the society, our last meeting being to discuss matters of interest to the society. These meetings have been held in Salt Lake, Ogden and Logan. We beg to submit the following report:

We beg to suggest that the Davis County Society be suspended, as it is out of existence, and should never have been a separate society. We suggest that those members in Farmington and south of there join the Salt Lake County Society, and those north join the Weber County Society. Inasmuch as there have been numerous changes in the present constitution and by-laws, we suggest that they be reprinted as corrected after this meeting. We recommend that the proceedings of this meeting be published in Northwest Medicine. We recommend that this society ask the A. M. A. to include in its list of the House of Delegates the secretary of each state society. We suggest that this society invite our neighboring state societies to send fraternal delegates to our state meetings. We earnestly ask that county secretaries send in their reports as required by law on time. We have audited the treasurer's accounts and found them correct.

Respectfully submitted,

R. S. Joyce and H. G. Merrill.

Dr. Critchlow: This report will be referred to the Commitee on Reports of Officers.

Dr. Ewing: At the last meeting of the American Medical Association at Atlantic City the advisability of having each state association act on an amendment to the constitution of the A. M. A., giving the Judicial Council of the A. M. A. the power of appellate jurisdiction, was taken up, and that was referred to the secretary by the secretary of the A. M. A., it being to cover all controversies arising in the state association. The following resolution was drawn and submitted to the council, but was too late to be embraced in their report.

Dr. Critchlow: This will be put before the House.

Dr. Ewing: The resolution is as follows:

Be it resolved, That the House of Delegates of the Utah State Medical Association approve and consent to the amendment proposed by the House of Delegates of the American Medical Association, by which the power of appellate jurisdiction is given to the Judicial Council of the American Medical Association over cases and controversies arising within the jurisdiction of the constituent association, and their component societies.

Dr. Critchlow: This does not seem to be with any desire to hold the whip-hand or any way restrict the privileges of the component societies of the states but it is intended to help, and I think it will be beneficial for us to sometimes shift the responsibility higher up. I will, therefore, entertain a motion on that matter.

Dr. Kahn: Do I understand that the secretary presented that as a resolution?

Dr. Ewing: Yes sir.

Dr. Kahn: I move the adoption of the resolution.

Motion seconded.

Dr. Ashley: I move the motion be laid on the table.

Dr. Merrill: I second the motion.

Motion put and carried.

Dr. Critchlow: The motion is carried and it will be laid over until tomorrow morning. If there is any other new business it will be entertained at this time.

The State Medical Journal.

Dr. Tyree: Mr. President, there is a matter I wish to bring before this session of the House of Delegates, and that is with reference to what is our official organ of publication; to define more clearly our relationship with Northwest Medicine, and to break away, if possible, from a rather queer relationship which we have with a medical paper published in Denver, called the Denver Medical Times. Ever since I have been in this state the Denver Medical Times has run what it called a Utah medical section. I don't know how familiar the members of this House are with that publication, with the way in which it was started, and with the rather surreptitious manner in which the Utah representation was gotten. The Denver Medical Times is a publication which is owned and published privately; has no connection with the Colorado State Medical Society, nor has it any official connection with our state medical society, but at the same time it has a section which is devoted presumably to the State Medical Association of Utah. The editorial staff of that paper consists of about twenty names, a great many of whom no longer reside in the state of Utah, and the articles which are published under the heading of the Utah section are not written by Utah men; are not at all representative of what we ought to write; contain none of the proceedings of our state medical association.

Then again, our relationship with Northwest Medicine is not, to my mind, as close a one as it should be. We have no editorial representation on that paper. About the only representation we have with that paper is the fact that our proceedings are published in it, under the heading of "Societies, State and Otherwise." About once a year there is a little squib in the Journal of the A. M. A., and that is the only way we, or the outside world, have of knowing what is going on. I don't see why we can't have a little closer connection with Northwest Medicine. If we are going to publish our papers there, we should have an editorial representation and have a department for news at least.

Dr. Kahn: Mr. President, I thoroughly agree with the sentiments expressed by Dr. Tyree. I am quite familiar with the history of that publication in Denver, of which he speaks, but it is unnecessary to go back twenty-five or thirty years and go through the details of it. I move you that Dr. Tyree be appointed a committee of one to do what be can to abolish that name and remove that stigma which I have always felt has attached to our society by reason of these facts; and also that he be appointed the editor for the Utah Medical Association to carry out the ideas and wishes as expressed by him, with Northwest Medicine.

Dr. Rich: Mr. Chairman, I would like to second Dr. Kahn's motion, and state that I am heartily in sympathy with the sentiments expressed by Dr. Tyree.

Dr. Fisher: I think the editors of that paper at the present time are gentlemen who contributed about ten dollars for stock in the paper at one time. However, I think we should request the members of this state society not to allow their names to be used as editors of that paper.

Dr. Hasler: Mr. Chairman, my discussion was along the lines covered by Dr. Fisher. They have my name as an associate editor of the Denver Medical Times and I don't remember exactly how they got it. About all I do remember is that the editor called me up one time and wanted to know if I would write something, or let him have something which I had written and, as I remember, I consented to his doing that and I think he put me on as an associate editor.

Original motion put and lost.

Dr. Tyree: Mr. Chairman, as a substitute for that, I would move you that the secretary of our state society be instructed to communicate with the editorial staff of the Denver Medical Times, requesting of them that the department known as "Utah Medicine" be eliminated from their publication. And second, that the secretary of our state medical society communicate with the editorial staff of Northwest Medicine, requesting of them that we be officially represented on their editorial staff and given a department in their paper.

Motion seconded.

Dr. Ewing: Mr. President, the first part of the motion I have no objection to. The second part, I think we are going beyond our authority all together. Northwest Medicine is owned by Oregon, Washington and Idaho. For what we get there we pay a dollar per member and each member gets the medical journal. The journal has been willing at all times to publish anything that I have sent in but, as to establishing a department, we are demanding something that we can only get as a favor. We don't own any part of the journal; have no say in the management of it whatever.

Therefore, I am opposed to the latter part of the motion which was put under the head of number two. I have no objection to the first part.

Motion put and carried.

Dr. Fisher: Mr. Chairman, I would like to make a motion that the secretary request the members of this society, whose names appear in the Denver Medical Times, to demand that their names shall be removed and also that the stock owned in that publication be sent to the secretary as an asset, to use it for whatever purposes he pleases.

Motion seconded, put and carried.

SEPTEMBER 30.

Dr. Critchlow: The House of Delegates will come to order. The secretary will read the minutes of Sept. 29.

Minutes read by Secretary Ewing.

Dr. L. B. Laker: I move the adoption of the minutes as read by the secretary.

Motion seconded, put and carried.

Dr. Critchlow: The next order of business is the election of officers. There is a small number of delegates present, and I would like to know whether you desire to proceed at this time or wait a little longer until we have a larger representation.

Dr. Kahn: I move that we proceed to the election of officers.

Motion seconded, put and carried.

Dr. Critchlow: Nominations for president are now in order.

On motion it was voted that the secretary be instructed to cast the unanimous vote of the House for Dr. R. S. Joyce, of Ogden, for president.

Dr. Critchlow: The next order of business is the election of a first vice-president. The custom in the past has been to elect one delegate from each district of the state, the first councillor district consisting of the northern part of the state, the second councillor district consisting of Salt Lake County and Davis County, and the third consisting of the southern part of the state.

Dr. J. W. Aird was duly elected vice-president.

Dr. E. J. Rich was unanimously elected second vice-president.

Dr. L. B. Laker was then elected third vice-president.

Dr. W. Brown Ewing was unanimously elected secretary, and Dr. Kirtley treasurer.

Dr. T. C. Gibson was elected to fill the unexpired term of Dr. Smedley, as councillor of the second district, and Dr. E. H. Smith, of Ogden, as councillor of the first district.

Dr. Critchlow: Is the Committee on Reports of Officers ready to report?

Dr. Ashley: Mr. President, our report is as follows:

Report of Reference Committee.

To the House of Delegates, Utah State Medical Association:

We, your Reference Committee, have examined the reports of officers and committees. We beg leave to report that the reports of the officers are correct and accurate.

We approve the reports and recommendations of the secretary, committees and councillors, and recommend the passage thereof by the House of Delegates.

Respectfully submitted,

(Signed) R. W. Ashley, J. W. Aird.

Dr. Van Cott: I move the acceptance of this report.

Motion seconded, put and carried.

Dr. Ashley: Mr. Chairman, I move that the resolution or memorial to the House of Delegates of the American Medical Association, regarding appellate jurisdiction, be taken from the table.

Dr. Rich: I second the motion.

Motion put and carried.

Dr. Critchlow: The resolution will be read by the secretary. (Resolution read by the secretary.)

Dr. Kirtley: Mr. Chairman, I should like to ask if this resolution intends that the decision of the Judicial Committee shall be final?

Dr. Critchlow: It does, as I understand it.

Dr. Ewing: Under the by-laws of the A. M. A., the power that the Judicial Council has so far is final.

Dr. Bowdle: Mr. Secretary, do I understand that if the local or state society had made a ruling on a matter, and it was reversed by the A. M. A. Judicial Council, that the reversal would stand, or would the matter simply be referred back for further discussion?

Dr. Ewing: The action of the Judicial Council would be final.

Dr. Rich: Mr. Chairman, I move the adoption of the resolution as read.

Dr. Kahn: I second the motion.

Motion put and carried.

Dr. Critchlow: The next order of business is the selection of the place for the next annual meeting.

Dr. Laker: Mr. President, I am in favor of maintaining Salt Lake City as our meeting place, for the simple reason that it is so geographically situated that the greater number of members will come from south of Salt Lake, rather than from Ogden and the north. Outside of a few members from Ogden there is a very small representation from that section of the country. Salt Lake has better conditions in every particular, both for the meetings and for the benefits to be derived, and in my judgment a greater number, by 50 per cent., will attend if it is held here rather than in the north or southern part of the state. Personally, I would be in favor of keeping Salt Lake as our next meeting place.

Dr. Rich: Mr. Chairman, I came down here expecting to ask you to give us the president and also the next meeting place in Ogden but, as Dr. Laker says, the success of these meetings depends largely upon the number of men present and the enthusiasm expressed, and I believe on that account that Salt Lake City is the logical place for the next meeting and also all meetings in the future. The Salt Lake men can get out to the meeting and at the same time keep some track of their business, and the number coming from out of town is comparatively small. So I would say make Salt Lake the next meeting place and, if we can do it legally, make it forever the meeting place.

Dr. Critchlow: That requires action each year.

Dr. Laker: I move that Salt Lake City be selected as the place of the next meeting.

Dr. Ashley: I second the motion.

Motion put and carried.

Dr. Critchlow: Some action will have to be taken upon a resolution to the House of Delegates of the A. M. A., with reference to making the secretary a member of that body. The secretary will kindly read the resolution. (Resolution read by secretary.)

Dr. Hampton: I move the adoption of the resolution.

Dr. Ashley: I second the motion.

Motion put and carried.

Dr. Critchlow: The next order of business is with reference to whether constituent state associations shall hold charters from the A. M. A.

Dr. Ashley: Mr. President, in view of the fact that there are a lot of knockers around in the world, and the further fact that we cannot be too closely welded together or to the American Medical Association, I move the adoption of the memorial.

Dr. Laker: I second the motion.

Dr. Kirtley: Mr. Chairman, I think it makes for cohesiveness in the American Medical Association and, as Dr. Green said last night, we are the American Medical Association. I am in favor of its adoption.

Motion put and carried.

Dr. Critchlow: The next is unfinished business

Dr. Ewing: I don't know of anything under that head.

Dr. Kirtley: Mr. President, I move we adjourn.

Motion put and carried to adjourn sine die.

SCIENTIFIC PROGRAM.

Morning Session, Sept. 29, 9:30 to 12.

Some Modern Conceptions of Heart Disease, E. H. Smith ....Ogden
Discussion opened by A. A. Bird,, E. V. Silver, Walter T. Hasler and J. F. Flynn.

Ruptured Abdominal and Pelvic Viscera. J. W. Aird ....Provo
Discussion opened by A. A. Kerr, C. C. Snyder, W. F. Beer and E. D. Hammond.

Hydro-Pyonephrosis. Causes, Diagnosis and Treatment. Experimental and Clinical. W. E. Schroeder. ....Chicago, Ill.
Discussion opened by E. F. Root, F. S. Bascom, J. E. Tyree, R. A. Bowdle.

Afternoon Session, 2 to 5:30.

A Red Eye. A. Ray Irvine ....Salt Lake City
Discussion opened by D. Moore Lindsay, Fred Stauffer, R. R. Hampton.

Clinic—Cases of Blindness. LeRoy Pugmire.. .... Ogden

On the Role of the Ductless Glands in the Function of Growth. Arthur D. Dunn........ .... Omaha, Neb.
Discussion opened by J. R. Morrell, W. N. Pugh, F. M. McHugh and A. Lipkis.

Clinics. By Horace G. Merrill, A. L. Castleman, W. R. Tyndale and

Mental Cases. By D. H. Calder and W. Brown Ewing.

Tuesday Evening.

Annual Banquet of the Utah State Medical Association, Hotel Utah, 7:30 P. M.

Morning Session—Sept. 30, 9:30 to 12.

Desirability of Early Treatment of Pre-Cancerous Lesions. Clarence Snow.........Salt Lake
Discussion opened by F. H. Raley,. C. K. MacMurdy, C. M. Benedict, C. F. Wilcox.

Cancer of the Female Breast. Jabez N. Jackson ....Kansas City, Mo.
Discussion opened by Union Worthington, J. C. Landenberger, A. J. Murphy and G. W. Middleton.

Treatment of Appendicitis. Ezra C. Rich...Ogden
Discussion opened by H. N. Mayo, Fred W. Taylor, E. Viko and L. B. Laker.

Repair of Bone Defects by the Use of Autogenous Bone Grafts. D. B. Phemister........ .... Chicago, Ill.
Discussion opened by A. C. Behle, S. C. Baldwin, R. T. Richards, A. J. Hosmer.

Afternoon Session—2 to 5.

Clean Milk for the Smaller Towns, R. W. Ashley ....Salt Lake
Discussion opened by W. E. Whalen, R. A. Pearse, W. P. Winters and A. G. Stoddard.

Modern Medicine and Its Social Responsibilities. Frederick R. Green, Sec. Council on Health and Public Instruction, A. M. A..... .... Chicago, Ill.
Discussion opened by R. W. Fisher, D. C. Budge, G. F. Harding, G. G. Richards.

Surgical Subject—Title not announced. A. F. Jones ....Omaha, Neb.
Discussion opened by R. S. Joyce, C. G. Plummer, E. Van Cott and C. J. Albaugh.

X-Ray Diagnosis of Gastrointestinal Conditions. C. W. Stewart ....Salt Lake
Discussion opened by Warren Benjamin, T. G. O'Dell, H. S. Scott and C. F. Osgood.

Report of the House of Delegates.

Installation of the President.

IDAHO STATE MEDICAL ASSOCIATION.

Proceedings of the Twenty-second Annual Meeting of Idaho State Medical Association, Boise, Ida., Oct. 8-9, 1914.

FIRST DAY—MORNING SESSION.

The twenty-second annual meeting of the Idaho State Medical Association convened in the rooms of the Boise Commercial Club and was called to order at 11 o'clock by the president, Dr. F. W. Mitchell, of Blackfoot. The following members and visitors were present during the sessions:

F. W. Mitchell, Blackfoot; W. H. Schuyler, Silver City; B. O. Clark, Emmett; E. E. Maxey, Boise; J. N. Alley, Lapwai; J. C. Woodward, Payette; V. R. Killen, Heyburn; J. M. Joyce, Portland, Ore.; J. M. Taylor, Boise; C. V. Genoway, Boise; C. P. Noble, Boise; W. F. Pike, Twin Falls; J. C. O'Day, Portland, Ore.; J. N. Davis, Kimberly; R. L. Nourse, Boise; W. H. Tukey, Boise; F. H. Brandt, Boise; A. R. Hoover, Cesarea, Turkey; W. E. Allen, Filer; L. P. McCalla, Boise; J. L. McDonald, Boise; J. C. Hill, Boise; S. J. Miller, Caldwell; J. W. Gue, Caldwell; F. M. Cole, Caldwell; C. L. Dutton, Meridian; A. C. Smith, Portland, Ore.; M. H. Tallman, Boise; H. J. Simmons, Blackfoot; J. S. Springer, Boise; F. E. Boyden, Pendleton; J. E. Crouch, Payette; T. N, Braxtan, Boise; W. S. Titus, Boise; J. R. Numbers, Boise; J. L. Stewart, Boise; S. W. Forney, Boise; H. P. Ross, Nampa; R. J. Cluen, Parma; Geo. Collister, Boise; Ralph Falk, Boise; E. N. Roberts, Pocatello; Jos. Clothier, Pocatello; C. R. Hudgel, Boise; R. C. Coffey, Portland, Ore.; J. E. Froom, Boise; S. B. Dudley, Weiser; J. W. Davis, Glenns Ferry; H. F. Neal, Meridian; G. W. Tape, Hot Lake, Ore.; J. M. Henry, Caldwell; T. D. Farrer, Caldwell; R. E. Shurtz, Boise.

Dr. M. H. Tallman, chairman of the committee on arrangements, reported that the officers would entertain the members and visitors at luncheon in the Commercial Club dining room, and in the evening there would be a plunge party at the Natatorium, to which all are invited. Tomorrow evening at 9 o'clock the Physicians and Surgeons Club of Boise will entertain the visiting physicians with a banquet at the Owyhee Hotel.

Amendments to the By-laws. The following amendments to the by-laws of the Idaho State Medical Association, which were read at the last annual meeting of the association and laid over until this meeting for final action, were read and referred to a special committee consisting of Drs. J. N. Alley and R. L. Nourse:

"Amend Section 3, Article VIII, of the by-laws of the Idaho State Medical Association as follows: At the end of the first line after the word 'payable,' insert the words 'in advance,' and at the end of the section add the sentence, 'Members at large shall pay their dues to the secretary-treasurer of the Idaho State Medical Association.'

"Amend Section 4, Article VIII, of the by-laws of the Idaho State Medical Association as follows: On the second line strike out the words 'for a period of one year,' and in lieu thereof insert the words 'on the first of April of the fiscal year.'

"Amend Section 5, Article VIII, of the by-laws of the Idaho State Medical Association as follows: On the first line strike out the word 'August' and substitute the word 'April' therefor; and on the third line after the word 'shall,' insert 'furnish a list of members who have paid their dues for current fiscal year and.'

The three sections as amended will read as follows:

"Section 3. All dues shall be due and payable in advance on the first day of January (which is the beginning of the fiscal year), of each year to the secretary-treasurer of the district or county medical society. Members at large shall pay their dues to the secretary-treasurer of the Idaho State Medical Association.

"Section 4. If a member's dues remain unpaid on the first of April of the fiscal year, without satisfactory excuse, the delinquent member shall be dropped, after first being duly notified, from the roll of members of the Idaho State Medical Association and its subordinate societies.

"Section 5. On or before April first of each year the secretary-treasurer of each district or county medical society shall furnish a list of members who have paid their dues for current fiscal year and pay to the secretary-treasurer of the Idaho State Medical Association three ($3.00) dollars for each member in his district or county who has paid his dues for the current year and in the same proportion for all delinquent dues collected since his last report, and one ($1.50) dollar and fifty cents for each non-resident member who has paid his dues for the current year."

Applications for Membership. The following applications for membership were read and, on motion, were referred to a special committee consisting of Drs. J. M. Taylor, R. L. Nourse and J. N. Alley for investigation and approval: V. R. Killen, of Heyburn; J. L. McDonald, of Boise; H. J. Simmons, of Blackfoot; W. W. Beck, of Blackfoot; R. W. King, of Victor; J. P. Kerby, of Arrowrock; C. A. Hoover, of Blackfoot; W. H. Schuyler, of Silver City.

Annual Report of Secretary-Treasurer.

The membership of our association is made up as follows:

	Members.
North Idaho District Medical Society	31
South Idaho District Medical Society	51
Twin Falls County Medical Society	3
Pocatello Medical Society	11
Bonner County Medical Society	9
Members at large	20
Removed from state but still in good standing	4
Total membership in good standing	129
Applications pending	4
Non-resident members	1
Total prospective membership	134

At last year's meeting a charter was granted to the Bonneville County Medical Society, but I am unable to learn if anything further has been done toward perfecting an organization.

In accordance with a resolution passed at last year's annual meeting, the president, Dr. Mitchell (accompanied by your secretary), last July visited the towns of Sandpoint, Coeur d'Alene, Wallace, Orofino, Lewiston and Boise in the interest of medical organization. At Sandpoint we organized the Bonner County Medical Society, to which, if no objections are raised at this meeting, a charter will be issued as soon as they have completed the draft of their by-laws and constitution. At Coeur d'Alene and Wallace we tried to organize local societies but we were unable to get the physicians of these places together. We attended a meeting of the North Idaho District Medical Society, at Orofino, where we and the members present were entertained by Dr. J. W. Givens. A day was spent at Lewiston, from which place we came to Boise, where the president attended a meeting of the South Idaho District Medical Society. Dr. Mitchell's expenses on this trip were $112 and, according to last year's resolution, are to be met by the association.

I again call your attention to the fact that the annual meeting of 1915 is to be held at Lewiston, in joint session with the state associations of Oregon and Washington, and I suggest at this time that before this meeting adjourns suitable action be taken to assure a creditable program, scientific and social, for next year's meeting.

Following is the condition of the association's funds:

Balance on hand as shown by last year's report	$210.75
Received from North Idaho District Mediical Society	47.00
Received from South Idaho District Medical Society	130.00
Received from Twin Falls Medical Society	15.00
Rceeived from Pocatello Medical Society	35.00
Received from Bonner County Med. Society	14.00
Received from members at large	50.00
Membership fees, applications pending	20.00
Total receipts for the year	$521.75
Have paid out:	
For subscriptions to Northwest Medicine	$113.75
For secretary's salary, one year	150.00
For stationery and printing	17.00
For postage	10.75
For expenses 1913 meeting	14.00
For badges and express on same	8.50
Total expenditures	$314.00
Balance on hand, October 8, 1914	207.75
	$521.75

Respectfully submitted,

Ed. E. Maxey, Secretary-Treasurer.

On motion the above report was accepted.

President's Address. In giving his annual address, the president, Dr. F. W. Mitchell, took for his subject "Medical Jurisprudence," with particular reference to surgical operations in the course of which the patient is put under a general anesthetic, and where he has designated no one to speak for him during the period of unconsciousness.

Discussed briefly by Dr. J. W. Gue.

The Future of European Clinics. By Dr. F. H. Brandt, of Boise. In this address Dr. Brandt, who has returned from Europe since the declarations of war, expressed his belief that it will be a number of years before the American physician will be able to get as much from the European clinics as he has in the recent past, and that there is now an excellent opportunity for promotion of the American clinic for postgraduate study.

Discussion by Drs. A. R. Hoover, Chas. P. Noble, Ed. E. Maxey, L. P. McCalla, A. C. Smith and F. H. Brandt.

The committee on applications reported favorably on the eight applications presented this morning and, on motion, the report of the committee was accepted and the physicians named were declared elected to active membership.

FIRST DAY—AFTERNOON SESSION.

The association reconvened at 2 P. M., with Dr. Mitchell in the chair.

Syphilis in the Role of Malignant Neoplasm. By Dr. J. Chris O'Day, of Portland, was the first paper of the afternoon session. The paper included the report of four cases showing the difficulty sometimes met with in differentiating between some forms of gumma and malignant tumors.

Discussion by Drs. J. M. Taylor, C. P. Noble, M. H. Tallman, Ed. E. Maxey, T. M. Joyce, J. L. Stewart and Dr. O'Day.

The Constitutional Factor in Surgery. By Dr. Chas. P. Noble, of Boise. The author directs attention to the fact that modern surgeons are only too prone to overlook or ignore the underlying constitutional factor which is often very largely the chief factor in the production of the condition for which they operate, particularly true of the various ptoses and of intestinal stasis.

Discussion by Drs. Gue, O'Day, Stewart, Taylor, Froom, Ross, Boyden and Noble.

Present Conception of Surgery of the Neck. By Dr. Thos. M. Joyce, of Portland, in which the speaker gives a resume of our present knowledge and the surgical treatment of this region of the body, especially emphasizing the importance of thoroughness in the dissection glands.

Discussion by Drs. Springer, Brandt, Alley, Boyden, O'Day and Joyce.

Large Lipoma of Index Finger. Dr. H. P. Ross, of Nampa, exhibited a tumor specimen showing the enormous size (2½x1½ inches) to which a simple lipoma of distal end of index finger will sometimes be allowed to grow before seeking surgical relief.

Crushing Injuries. By Dr. W. A. Wright, of Pocatello. In the absence of the author, this paper was read by title and ordered published.

Differential Diagnosis of Appendicitis, Gastroenteritis and Typhoid. By Dr. Ray H. Fisher, of Rigby. In the absence of the author this paper was read by title and ordered published.

SECOND DAY—MORNING SESSION.

Called to order at 10:30, Dr. Mitchell presiding.

The president announced the following committee on nominations, and instructed them to have their report ready for this afternoon session:

M. H. Tallman, chairman, to represent South Idaho District Medical Society; John N. Alley, to represent the North Idaho District Medical Society; J. N. Davis, to represent the Twin Falls County Medical Society; E. N. Roberts, to represent the Pocatello Medical Society; V. R. Killen, to represent the Bonner County Medical Society.

Some Phases of Medical and Surgical Practice in Asiatic Turkey. By Dr. A. R. Hoover, of Cesarea, Turkey. A very interesting address in which the doctor gave us many of his experiences as a medical missionary in the far interior of Asiatic Turkey.

Report of Cases of Trachoma Treated with Bacillus Lactis Bulgaricus. By Dr. C. R. Hudgel, of Boise, in which the author reports three cases of second stage trachoma treated with this remedy, with very pronounced benefit in each case.

Discussion by Drs. Nourse, Clothier and Alley.

Report of a Case of Parinaud's Conjunctivitis. By Dr. S. B. Dudley, of Weiser. A verbal report of a case, possibly two, seen by him in his practice, characterized by monocular polypoid granulations, swelling and edema of lids, mucopurulent discharge and enlargement and suppuration of preauricular glands.

Discussion by Drs. Clothier, Hudgel, Davis, Coffey and Dudley.

Report of a Case of Syphilis of Internal and Middle Ear. By Dr. Ed. E. Maxey, of Boise. A case characterized by deafness and tinnitus in right ear, extreme dizziness and staggering gait, a variable amount of pain in region of ear, and complete paralysis of right facial nerve; with specific history, in which a blood test gave a doubtful Wassermann and the spinal fluid a +4 reaction.

Discussion by Drs. Tallman and Maxey.

Infant Feeding in Intestinal Disorders. By Dr. J. N. Davis, of Kimberly.

Discussion by Drs. Tallman and Davis.

SECOND DAY—AFTERNOON SESSION.

The association reconvened at 2:30 with the president in the chair.

Graphic Studies in Cardiac Arrythmia-Ectopic Systole. By Dr. M. H. Tallman, of Boise.

Discussion by Drs. Taylor, Coffey and Tallman.

The Two-Stage Operation for Treatment of Cancer of the Rectum. By Dr. R. C. Coffey, of Portland. The speaker advocated the advantage of reversing the usual order in operating on these cases by doing the larger operation first. His method is to make a large incision in the abdominal wall, free the lower large bowel, sever colon above diseased portion, establish artificial anus in left iliac region and by means of a tube introduced from below through rectum, prolapse the stump of sigmoid and rectum, which prolapsed gut is removed by modified Kraske operation about ten days later.

Discussion by Drs. McCalla, Smith, Boyden, Joyce and Coffey.

Treatment of Goitre. By Dr. Andrew C. Smith, of Portland. In the opinion of the author the medical treatment of goitre is limited to the iodids and arsenic, the iodids in simple goitre and arsenic in Graves' disease, and to this treatment might be added the drinking of boiled water. Exophthalmic goitre is always, in his opinion, a surgical condition.

Discussion by Drs. Joyce, Tallman, McCalla, Taylor, Dutton, Stewart and Smith.

Executive Business. In the matter of the conservation of vision, the secretary called attention to a letter from Frederick R. Green, of the Council on Health and Public Instruction of the American Medical Association, in which the Idaho State Medical Association is asked to name some one to look after the interests of this work in Idaho, and on motion, the appointment of Dr. R. L. Nourse, of Boise, was confirmed, who is requested to continue the work commenced by him in Idaho.

In reference to the entry of insane and mentally defective immigrants to this country being a menace to the mental health of the nation in the present and succeeding generations, this association by motion, endorsed and approved the set of resolutions adopted by the New York State Medical Society at its recent annual meeting.

The committee appointed to report on proposed amendments to the by-laws having made a favorable report, the amendments were, by unanimous vote of the association, adopted.

Report of Committee on Nominations. Your committee on nominations reports the following nominations:

President, Dr. John N. Alley, of Lapwai; vice-president, Dr. F. M. Cole, of Caldwell; chairman of committee on nominations, Dr. C. P. Stackhouse, of Sandpoint; chairman of committee on arrangements, Dr. O. C. Carssow, of Lewiston.

Chairman of committee on legislation, Dr. R. L. Nourse, of Boise; chairman of committee on public health, Dr. O. B. Steely, of Pocatello; delegate to A. M. A., Dr. L. P. McCalla, of Boise; alternate delegate to A. M. A., Dr. H. M. Tallman, Boise; journal trustee, to succeed Dr. J. W. Givens resigned, Dr. Ed. E. Maxey, of Boise.

Next meeting place (decided two years ago) will be Lewiston.

Respectfully submitted,
M. H. Tallman, Chairman;
E. N. Roberts;
J. N. Davis;
J. N. Alley,
By Ed. E. Maxey, proxy;
V. R. Killen.

On motion the report of committee on nominations was accepted and the secretary instructed to cast the unanimous vote of the association for each of the nominees, which was done and they were declared duly elected.

On motion, the president-elect is empowered to appoint necessary assistants and committees for the Lewiston meeting.

No further business appearing, the association adjourned.

OREGON.

PORTLAND CITY AND COUNTY MEDICAL SOCIETY.

Pres., A. W. Moore, M.D.; Sec., G. S. Whiteside, M.D.

A regular meeting of the Portland City and County Medical Society was held in the Medical Building, Oct. 7, 1914, at 8:30 P. M., President A. W. Moore in the chair.

Members present: N. W. Jones, Selling, Pease, Howard, Holden, Kiehle, L. Nelson, Else, A. E. and J. Rockey, Gillert, Flagg, Webster, Fenton, Booth, Rosenfeld, Tucker, McClure, Sabin, Tilzer, Slocum, K. Manion, Coe, K. A. J. MacKenzie, C. C. Moore, Parker, Rybke, Menzies, Bodine, Hall, Williamson, Buck, Hamilton, Dillahunt, Spencer, Connell, Wolf, Ross, Cardwell, Myers, Johnson, Swennson, Strumm, A. W. Moore and Whiteside. Proposed for membership, H. Swartz.

PAPER.

Chronic Constipation. By R. C. Coffey. Surgery previously had been anatomic. Modern surgery is physiologic. The anatomy of the intestine is indicative of the work it must do. Comparative anatomy of various animals and man. Tells of experiments on animals and quotes Cannon and others on physiology of the colon. Bacterial digestion in the cecum. Motility of normal and pathologic intestines. Role of habit in constipation. Anatomy of the peritoneum. Influence of the erect posture in man. Intra-abdominal pressure. Deposits of fat about the abdominal viscera. Gas produced in the gut. Relation of these fat deposits to dilatation of the stomach and colon. Treatment by rest and extra feeding. Restoration of regular habit. Surgical measures when these properly tried do not relieve. Ninety per cent of cases do not require surgery. The surgical 10 per cent. consist of cases of median line ptosis, mobile cecum, adhesions in the region of the ileocecal valve and a few other conditions.

Discussion opened by Drs. A. E. Rockey and N. W. Jones. In medical treatment the general asthenic state should be recognized. In the failure to recognize this lies the fault of many operations. It is important by dietetic measures to overcome errors of intestinal peristalsis and to deposit extra abdominal fat and in this way to restore tone to muscle. Drs. Williamson and Else also discussed the paper. Dr. Coffey closed.

Dr. A. W. Moore reported a case of perforating ulcer of the stomach; operation and recovery.

WASHINGTON.

KING COUNTY MEDICAL SOCIETY.

Pres., D. H. Palmer, M.D.; Sec., G. W. Swift, M.D.

The regular semi-monthly meeting of the King County Medical Society was held in the assembly room of the Chamber of Commerce, Oct. 5, 1914. Meeting was called to order by the president, Don H. Palmer, at 8 o'clock, 84 members being present. Minutes of the previous meeting were read and approved.

CLINICAL REPORTS.

Banti's Disease. By J. D. Sayre.

Primary Carcinoma of Liver. By F. L. Horsfall.

PAPERS.

Paraffin in Surgery. By A. E. Burns.

Discussion by R. C. Plummer, N. D. Pontius, B. S. Paschall and A. E. Burns.

Appendicitis in Children. By F. L. Horsfall.

Discussion by J. B. Eagleson, J. B. Manning, Walter Gellhorn, H. J. Davidson, A. P. Lensman, H. D. Dudley and F. L. Horsfall.

Notice was given of a dinner to be held at the College Club, Oct. 17.

The proposed amendment was read for the third time. In discussion, Dr. Horsfall spoke in opposition to the amendment on the ground that, if a member did not care enough to come and vote, he should have no vote. Dr. C. H. Thomson said he questioned the validity of the amendment. Amendment lost, 19 for and 19 against.

Drs. C. M. Burdick, H. J. Knott, C. Lapidewsky, L. A. Newton and F. S. Sandborg were elected to membership.

The application of W. Ray Jones was read.

The second regular semi-monthly meeting of the society was held in the Chamber of Commerce, Monday evening, Oct. 19. The meeting was called to order by the president, Don H. Palmer, 93 members being present.

PAPERS.

The Treatment of Gonorrhea. By G. S. Peterkin.

Discussion by Drs. Peacock, Jansen, Hoopman, Davidson and Peterkin.

Pain Caused by Gallstones. By C. W. Sharples.

Discussion by Drs. Winslow, Leede, Lensman, Loe, West and Sharples.

A letter was read from Dr. N. W. Jones, of Portland, relative to a visit from Dr. Rosenow, of Chicago. Dr. Smith said that he considered it a good plan to have Dr. Rosenow come to Seattle.

Moved by Dr. Lyon that we extend a cordial invitation to Dr. Rosenow to come to Seattle and that the society pay its share of the expenses. Seconded and carried.

Dr. Ray W. Jones was elected to membership.

The applications of Drs. Baumgarten and Caslin were read.

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Pres., R. W. Perry, M. D.; Sec., E. B. Burwell, M. D.

The academy met at the office of the president following a dinner at the Hotel Savoy. The minutes of the former meeting were read and approved.

CLINICAL CASES.

Posterior Staphyloma. By Dr. Pontius. It was at the nasal side of the disc in a woman with a low degree of myopic astigmatism.

Dr. Swift said there was no question of the diagnosis and advised trephining the corneoscleral margin if the staphyloma was increasing.

Dr. Gray suggested the nose might be at fault and that not enough attention was paid to the nose as an etiologic factor.

Dr. Burwell said he thought too much attention was paid to the nose as he had seen very few cases of this kind in which the trouble could be proved to originate in the nose.

Dr. Gray said he had cured many cases of asthenopia by attention to the nose.

Drs. Pontius and Perry agreed as to the nose causing asthenopic symptoms but not conditions of this kind except in rare instances.

Dr. Perry called attention to the relation of the lachrymal passages to atrophic rhinitis in childhood. He does a turbinectomy giving better drainage to the dammed-up tears in this condition.

Dr. Wood had not been able in many cases to find nasal troubles to account for eye conditions except in lachrymal troubles. He resected the middle turbinate for ethmoid trouble and thinks ethmoid infection to be responsible for many cases of atrophic rhinitis.

A discussion was interjected as to the advisability of paraffin injections in atrophic rhinitis.

Dr. Wood was not enthusiastic but said some cases were made more comfortable if the procedure was used after the cause was removed.

Dr. Pontius injects not under the mucous membrane of the turbinates but makes a pocket under the mucous membrane of the septum and injects cold paraffin.

Dr. Plummer said if infection was still present in the nose, it was a contraindication to this procedure. Was advisable after cause was removed to make patient more comfortable by reducing air space.

Dr. Perry agreed and showed his instrument for injecting the paraffin.

Injury at Corneoscleral Margin. Dr. Klemptner showed a case of this injury in a man of 38 years, with luxation of the cataractus lens into the anterior chamber. Eye quiet. Has never been any tension or pain.

Dr. Burwell considered it was a good eye to leave alone for the present as long as the eye was quiet and tension normal.

Dr. Gray said he would enucleate as he considered it a dangerous eye.

Drs. Swift and Wood saw no reason for enucleating but would remove lens.

Dr. Pontius would leave alone as much vitreous would be lost if lens was removed.

Paresis of Both Externi. Dr. Burwell showed this case, following an attack of grippe, in a man 42 years of age, the so-called rheumatic type. Considered the prognosis good in this class of ocular paresis.

Dr. Pontius suggested it might be an expression of a general weakness, the externi being relatively weak muscles.

Dr. Hawley reported a similar case.

PAPER.

The Ductless Glands. Dr. Swift read an interesting paper on the recent woik on this subject and the special interest it has on eye and ear work.

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

A Treatise on Clinical Medicine. By William Hanna Thomson, M. D., LL.D., formerly Professor of Practice of Medicine and of Diseases of the Nervous System in the New York University Medical College, etc. Octavo volume of 667 pages. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, $5.00; half morocco, $6.50.

While recognizing the importance of the indispensable knowledge gained in the laboratory and at autopsy, Dr. Thomson brings to mind that the physician's prime requisite is ability to accurately determine the significance of symptoms in order to treat the patient rationally. In this treatise he gives us a book which not only is a masterpiece but which gives many valuable suggestions on the interpretation of symptoms. The work is divided into three parts, the first comprising three chapters, of which the first deals with the mechanism of catching cold. The second discusses the significance of common but important symptoms, such as pain, cough, dyspnea, vomiting, etc. As these usually determine the prognosis of disease they are taken up in detail and the reader is given an exceptionally clear idea of their importance. The third takes up remedies—non-medicinal, medicinal, vaccine and serum therapy. Part two deals with diseases directly communicable by intermediate carriers and those communicable by inoculation. There is also a special chapter on infections by the bacillus coli. In the third part diseases of special tissues and organs are discussed. Throughout the author writes just enough of symptoms and treatment to make the disease in question clear and up-to-date, adding at times an illustration from personal experience. The classification of diseases is to be especially commended. The aim of Dr. Thomson has been to serve the physician while he is actively engaged in the performance of his professional duties and it will be found that this object has been exceedingly well attained.

TURNER.

Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and Their Employment Upon a Rational Basis. By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College of Philadelphia. New (15th) edition, thoroughly revised and rewritten. Octavo, 998 pages, with 144 engravings and 7 plates. Cloth, $4 net. Lea & Febiger, Publishers, Philadelphia and New York. 1914.

There are few medical writers who would not envy the author of a professional book in its fifteenth edition. Hare's book occupies this unique distinction. The work has become an institution rather than a book. This is due to the fact that it is assuredly one of the most valuable aids to every-day practice on the physician's desk. One picks it up to get the latest thing in treatment in the therapeutic section, to quickly find the antidote to a poison, the dose of a new preparation, or to refresh the mind on a therapeutic application, as a lumbar puncture. The alphabetical arrangement and the curtailing of physiologic actions (which are always "subject to change without notice" just as we think we know something about them), render the book particularly practical. Revision is especially to be found in the subjects of salvarsan and neosalvarsan, tuberculin, anesthetics and digitalis. WINSLOW.

A Text-Book of Pathology. For Students of Medicine. By J. George Adami, M. A., M. D., LL.D., F. R. S., Professor of Pathology in McGill University, Montreal, and John McCrae, M. D., M. R. C. P., (London), Lecturer in Pathology and Clinical Medicine in McGill University, formerly Professor of Pathology in the University of Vermont. Second edition, enlarged and thoroughly revised. Octavo, 878 pages, with 395 engravings and 13 colored plates. Cloth, $5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

To those familiar with the first edition of this work it is sufficient to say that this second edition not only equals but excells the first. The arrangement of the subject is excellent. Beginning with general pathology, cells and tissues are first discussed. Then follow the causes of disease, the morbid and reactive processes, the more important infections and their outstanding features, the regressive tissue changes, the progressive tissue changes. These are followed by special and systemic pathology. The classification of tumors has been simplified, the latest work dealing with toxins, and the effects of "split products" in causing disease has been given. We believe the illustrations to be the best and most numerous that we have ever seen in a work of this kind.

WEST.

A Manual of Practical Hygiene. For Students, Physicians and Health Officers. By Charles Harrington, M. D., late Professor of Hygiene in the Medical School of Harvard University. Fifth edition, revised and enlarged by Mark W. Richardson, M. D., Secretary to the State Board of Health of Massachusetts, in collaboration with the following officials connected with the Massachusetts State Board of Health; W. H. Clark, Chief Chemist; X. H. Goodnough, Chief Engineer; William C. Hanson, M. D., Assistant to the Secretary; Hermann C. Lythgoe, Chief Analyst of Food and Drug Department, and George H. Martin, formerly Secretary to the Massachusetts State Board of Education. Octavo, 933 pages, with 125 engravings and 24 plates in colors and monochrome. Cloth, $5.00, net. Lea & Febiger, Publishers, Philadelphia and New York. 1914.

The most striking new feature of this edition is the very valuable and clearly written chapter on "Hygiene of Occupation," by Hanson. This chapter is splendidly illustrated and the subject matter is based, for the most part, upon the actual experience of the author, as the supervising administrator of the Massachusetts laws relative to sanitary factory inspection. Another valuable new chapter is that of "Medical Inspection of Schools." Written by former secretary of the Massachusetts State Board of Education, this is the best condensed summary of the subject that the reviewer has ever read. The only serious criticism that might be made is that the editor did not see fit to amplify it to at least twice the amount of space allotted to it. The chapter on "Relation of Insects to Human Diseases" has been entirely rewritten and is a most interesting and clear presentation of the subject. It is rather surprising, however, to see as interesting and important a disease as rocky mountain tick fever dismissed in a few words, when there now exists such a substantial body of literature by most competent authorities on this subject. In the chapter on "Infection, Susceptibility and Immunity" considerable material is introduced, notably the more recent developments of antityphoid serum therapy. KELLEY.

Geriatrics; the Diseases of Old Age and Their Treatment. By I. L. Nascher, M. D. With an Introduction by A. Jacobi, M. D. Cloth, 81 illustrations, 517 pages. P. Blakiston's Sons & Co., Philadelphia. 1914.

This large-sized volume is devoted to a monograph on old age de senectute. Most of the diseases are common to the mature as well as to the aged and it is doubtful whether the writing of such a prolix, commonplace and verbose discussion of the subject is worth while. If only those conditions peculiar to the aged, and particularly symptoms common to the latter period of life, were considered the book would be a distinct contribution to our literature. For example, dizziness is one of the frequent complaints of the aged and may be due to lack of free drainage from the accessory sinuses as well as to arteriosclerosis, etc., but dizziness is not even mentioned in the index. As a whole, the reviewer fails to find any sufficient excuse for the gestation and parturition of this mental offspring and predicts that it will perish of infantile marasmus, from lack of professional aid, before it ever reaches old age itself. WINSLOW.

Pediatrics and Orthopedic Surgery. Vol. V., Series 1914. Practical Medicine Series. By Isaac A. Abt, M. D., Prof. of Pediatrics, Northwestern Univ. Med. School, and John Ridlon, M. D., Prof. of Orthopedic Surgery, Rush. Med. College. Price, $1.35. Year Book Publishers, Chicago.

The excellent character of pertinent reviews of recent literature is maintained in this as in former editions of this series. It is unfortunate that, after many years of pasteurization of milk, its effect on the nutrition of the infant has not been definitely determined. Morse calls attention to the absolutely and relatively increased number of cases of infantile scurvy coming to the out-patient department of the Boston Children's Hospital during the last four years, which would appear due to proprietary foods, stale foods, and **the heating of milk to the temperature of pasteurization or higher.** Schelbe states that tuberculosis in childhood has made more advances than all the other branches of pediatrics combined. This probably can be attributed to two factors, the generally accepted view that the disease in most instances has its origin in childhood and to the introduction of the radiogram in relation to bronchial glands. There are also reviews on tuberculosis by Sluka, of the St. Anne Spital, of Vienna, Holt, Mitchell, Mendelbaum, Ickert, Eckert, of the Charite Spital, at Berlin, and Von Pirquet, of the new Kinderklinik, at Vienna.

MANNING.

A Text-Book of the Diseases of the Nose and Throat. By Jonathan Wright, M. D., Director of the Department of the Laboratories, New York Post-Graduate Medical School and Hospital, and Harmon Smith, M. D., Surgeon to Throat Department of the Manhattan Eye, Ear, Nose and Throat Hospital. Octavo, 683 pages, with 313 engravings and 14 plates. Cloth, $5 net. Lea & Febiger, Publishers, Philadelphia and New York. 1914.

The exceptional feature in this work is the emphasis laid upon etiology and pathology, which alone is a sufficient recommendation. The embryology and histology of the parts concerned are given very completely, this matter being based largely upon original research by the authors. The book is also very complete in regard to topical and operative treatment. Among the new features are suspension laryngoscopy with full description of Killan's apparatus and the technic of operating it; and the Sluder tonsil operation with illustrations showing the mechanical and anatomic principles involved. Diseases of the mouth and esophagus are included, and the technic of gastroscopy is shown. The subject of hay fever is discreetly touched upon only briefly. In regard to removal of tonsils and adenoids, the authors seem to occupy a safe middle ground, with a tendency to the conservative side. They say, "The sooner the practitioner gets over the idea that the tonsils are heaven-ordained structures, created by a special Providence for the repletion of the purse of the laryngologist, the better it will be for the dignity of the medical profession." Would that we might add, so say we all.

SEELYE.

Gynecology. The Practical Medical Series, Vol. IV, 1914. By E. C. Dudley, M. D., Prof. of Gynecology, Northwestern University Medical School, and H. M. Stowe, M. D., Associate in Gynecology, Northwestern University Medical School. 232 pages; Price $1.35. The Year Book Publishers, Chicago.

This book well fulfills its essential purpose in presenting brief summaries of the gynecologic literature of 1913. In so doing, however, it brings to light two rather disappointing facts. It appears that the compilers have been obliged to rely for the great part upon foreign authors, as American writers are far outnumbered. Further, one gets the impression that the year did not witness any very notable additions to gynecologic knowledge. Physiologic studies concerning menstruation, ovulation and the internal secretions are numerous and interesting. Dysmenorrhea receives considerable attention. Adherents of the many methods of correction of prolapse are given space impartially. Vaccines are both praised and condemned. The treatment of uterine disorders by x-ray, radium and mesothorium receives considerable attention, with some very favorable reports. The work is of great interest and value to those who desire to keep abreast of gynecologic progress.

MARTIN.

Manual of Obstetrics. By Edward P. Davis, A. M., M. D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. 12mo of 463 pages, 171 illustrations. Cloth, $2.25 net. Philadelphia and London: W. B. Saunders Company. 1914.

One's first impulse in picking up a book of this kind is a curiosity to see what has been left out, in order to bring the text down to size. In the present instance we find there is no important phase of obstetrics which is left unconsidered. Omission of lengthy discussions and the adoption of a somewhat didactic style have served to make the work of distinct value to the student, and to those who desire definite directions to meet specific problems. Dr. Davis has succeeded in presenting the most widely accepted methods of obstetric practice in a very readable and valuable little volume.

MARTIN.

General Medicine. The Practical Medicine Series, Vol I, Series 1914. Edited by Frank Billings, M. S., M. D., and J. H. Salisbury, R. M., M. D. The Year Book Publishers, Chicago. Price $1.50.

The authors have clear and concise reviews of a great part of the work done in 1913 along the different lines of medicine and by cleverly arranging the data have managed to make the reading of these short reviews very interesting and instructive. This book is, therefore, a welcome means for enabling the busy practitioner to keep in touch with the progress of medicine without going over all the journals.

LEEDE.

A Manual of Biological Therapeutics. By Parke Davis & Co., Detroit, Mich.

This is a book of much value and interest to every physician using vaccines, sera, etc. It contains information as to the methods of manufacturing the products of the authors of the book. There are also useful data as to the actions of the various biological products and the methods of their administration. It will be well worth the while of every physician to possess this book and to devote time to its perusal. It will be sent free to any physician writing for the same to Parke Davis & Co., at their home office in Detroit.

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ORIGINAL CONTRIBUTIONS

MODERN MEDICINE AND ITS SOCIAL RESPONSIBILITIES*.

By FREDERICK R. GREEN, M. D.
CHICAGO, ILL.
Secretary Council on Health and Public Instruction, A. M. A.

When I received an invitation from your program committee to discuss this question before the Utah State Medical Association, I gladly accepted the opportunity. There is today serious need of an increased appreciation of the social responsibilities of the medical profession. As these are largely responsibilities of physicians in the aggregate than as individuals, it is important that they should be discussed in medical organizations and should become the basis of intelligent action. The unprecedented growth of our knowledge regarding disease and its prevention during the last forty years and the stimulus to scientific research which has come through the newer methods of investigation have so monopolized the attention of physicians that the greater part of our ability and energies has gone into the exploration of these new fields. Knowledge has increased so rapidly that it has been difficult for members of the medical profession itself to keep track of its advance. In most cases, individual physicians have only been able to master one particular field. As far as the people are concerned, they have been utterly unable to keep pace with the rapidly growing knowledge of the profession and are consequently often unable to understand what physicians are trying to accomplish. Yet the most superficial survey of the field will convince anyone, not only that the social responsibilities of the medical profession are today greater than ever before, but also that never before has there been so wide a gap between technical, scientific knowledge on the one hand and popular opinions on the other.

One of the paradoxes of the situation is that we have today a medical profession better educated, more competent, capable and desirous of doing more for the prevention of disease and the benefit of society than ever before, while the mass of people, although more intelligent and better informed on general subjects than their forefathers, are largely unaware of the benefits which they may derive from the application of the knowledge of modern medicine and are hindering and delaying, by their indifference and at times by their open opposition, the application of knowledge in the hands of physicians, which can be utilized in protecting the people from disease and in prolonging their lives. This anomalous condition has long been recognized. It has not, however, been as generally recognized as should have been the case that such a condition must be due to definite causes and that, if sufficient study were given to it, some solution must be found. As the will of the majority is the only compelling force recognized in our government and as the support of public opinion is indispensable for the successful carrying out of any social measure, whether in the form of laws or customs, it is evident that the recognition of the causes underlying the present situation and the removal of any obstacles to the fullest cooperation and understanding between the medical profession and the public constitute a problem of the highest importance and worthy of the attention of the greatest minds in the profession.

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*Read before the Twentieth Annual Meeting of Utah State Medical Association, Salt Lake City, Utah, Sept. 29-30, 1914.

For a clear understanding of any problem it is constantly necessary to revert to essential principles. Too often those who are participating in current events are unable to estimate correctly the relative value of different factors in the problem on account of their very nearness to and intimate participation in its phenomena. Accurate history cannot be written until years after the events which it describes. We are living today in a period of greater importance to the future of civilization than the years of the Napoleonic wars. Yet we know far less about the movements of contending armies in Europe than we do of any of Napoleon's campaigns. Active participation in any campaign and personal advocacy of any measure are apt to develop personal prejudices and opinion, often based on insufficient evidence or biased statements, with which opinions we are often reluctant to part. It is only by reducing the problem to its simplest term, stripping off all nonessential and obscuring details and stating the questions involved in their fundamental form that we are able to divest our minds of personal and local prejudices and the recognize all the factors in the situation.

My subject carries with it by implication several questions which must be answered. These are: How does modern medicine differ from the medical knowledge of preceding generations and how has this change altered the relations of society and physicians? What are the social responsibilities of modern medicine and how do they differ from those of previous generations? What are the ideal relations which should exist between the medical profession and the public? What are the mutual duties and responsibilities of the two parties to each other? How can these responsibilities be made plain, both to physicians and to the people, and how can each party to the obligation be led to recognize and perform its plain duty?

If I were addressing a general audience, I would consider it necessary at this point to discuss the change which has taken place in the last half-century regarding our knowledge of epidemic diseases and to show, from history, how plagues have afflicted mankind in all ages, how in spite of advancing knowledge on all other subjects, they still continued to be truly pestilences which walked in darkness. No one knew whence they came, how they were caused or how they could be prevented, because their cause lay below the vision of man, in the microscopic world. Few realize the importance of the invention of the compound achromatic microscope in 1835 which first made it possible to study microscopic life. The work of many investigators in this field did not culminate until the middle of the last century, in the monumental work of Louis Pasteur, who first demonstrated the microscopic cause of diseases and devised an effective method of their prevention. His work, probably the greatest which any one man has ever done for humanity, finally lend him to the epoch-making and immortal assertion, "It is possible for civilized man to cause all contagious diseases to disappear from the face of the earth."

These facts are well known to all physicians. They are not as well known nor their importance as well understood by the public as they should be. The work of Pasteur and his successors has entirely changed the relation of the state to public health. A danger which is visible to all and readily recognized needs only to be stated to be avoided. Dangers to life and health which the average normal man and woman can see require little if any legislation. The instinct of self-preservation is sufficient, if the danger be known. But in diseases caused by microorganisms the cause is not only invisible, but the specific cause can only be recognized by men of expert technical training, equipped with delicate instruments of scientific precision. The avoidance of such diseases clearly cannot be left to the individual. It, therefore, becomes the duty of society to do for the protection of the individual what he cannot do for himself and to utilize scientific knowledge in protecting him from harm which he alone cannot avoid. The entire relation of the state to the people and of the medical profession to society and to organized government, whether of the city, the state or the nation, has changed entirely during the last forty years, through the development of our knowledge regarding the causes of disease. The moral and legal justification for state activity for the prevention of disease lies not in the demands of the medical profession, but in the fact that it is the duty of the state to protect its citizens against dangers from which they cannot safeguard themselves.

The justification for public education is the prevention of disease and the prolongation of life. Such objects need no argument. It is necessary, however, to convince the mass of the people of the possibility of their accomplishment.

When we look over the history of public health legislation during the last fifty years, it is difficult to say whether surprise, indignation or amusement are most predominant. The misunderstandings, antagonisms and conflicting efforts on the part of physicians and the public might well be cause for amusement, were the results of such misunderstandings not so serious. Prior to the middle of the last century there was practically no recognition of the responsibility of society and of the state in the prevention of disease. The state was in the same position as the medical profession. It had nothing to tell the people. It could only wait until a man or woman was stricken with disease and then care for them, if they were without other protectors.

Late in the sixties growing conceptions regarding the duties of the state toward its citizens began to take definite form. In 1869 Massachusetts established the first state board of health. California followed in 1870. At various periods since that time each state has created some kind of health organization. Some began as quarantine bodies, some as examining bodies, some as state boards of health *de novo*. The United States Public Health Service has recently issued an interesting summary of the history and general condition of our state health organizations. A careful reading of this study must impress every one with the amazing diversity of method and machinery as well as the large amount of waste effort required to secure the creation and perpetuation of these boards. Examination of the Proceedings of the Association, from 1870 to 1877, will show that the principal force in their creation was the American Medical Association and that the most important factor in securing the establishment of these boards, in maintaining them and in performing their functions, was the medical profession.

The object of establishing these boards was and is to prevent unnecessary sickness, reduce the death rate and make the people of the state healthier, happier, richer and longer lived. If there be any work which is more unselfish, self-sacrificing and clearly for the public good, history does not record it. Yet the principal difficulty during the forty-five years which have elapsed since Massachusetts passed her first law has been to convince enough of the people of any state of the desirability of such work to secure its establishment and development. Certainly when concerted and continuous effort is necessary to persuade people to allow themselves to be saved from sickness and suffering and when the facts in the case are as readily demonstrable as the figures of the multiplication table, something must be seriously wrong with the manner in which this subject has been presented to make such a situation possible. When the history of the last forty-five years is reviewed, it is not difficult to see why the task has been a difficult one.

Following the development of modern bacteriology and pathology and recognition of the possibilities of state activity in preventing disease, efforts began to be made, as we have seen, to utilize the power of the state for the protection of the public. Now the average American has the utmost confidence in the power of legislation to accomplish almost any reform. Here was a field for legislation entirely for the public good and yet the knowledge on which effective legislation could be based lay entirely outside the grasp of the average citizen. The specialist and the expert are not necessarily the wisest guides in legislative or public affairs. The expert is usually of the purely scientific type, engrossed in the problems of his particular field, positive as to his specific knowledge, but not necessarily broad in his conceptions or tolerant of the attituude of the average individual. He sees many wrongs which should be corrected, waste and loss of power which should be avoided and evils which should be eliminated, and, with his special knowledge and technical training, the way to secure these reforms seems clear and straight if only he could be allowed to enact and enforce the regulations which he knows would be effective. He is often impatient with the layman who, lacking his training and expert knowledge, is unable to follow his reasoning or to understand his conclusions. The task of convincing a majority of average citizens by translating scientific facts into popular terms and placing the results of scientific research before the public in easily understood form seems to the expert to be a hopeless task. How much easier it would be, he thinks, if only by the exercise of benevolent despotism, a law could be passed decreeing that certain things should or should not be. As long as the object of such laws is the public good, the enthusiast concludes that any means are justifiable by which such legislation can be secured. This has been the line of reasoning which has too often been followed in planning public health legislation.

When it is recalled that the forty years which cover the development of our present day knowledge of preventive diseases coincide almost exactly with the period of special influence and class legislation in most of our legislative bodies, it is not strange that the medical and sanitary expert has too often fallen into the ways of the professional politician. The further and graver errors of mistaking legislative enactment for constructive progress, of thinking that the passage of a law marked a real achievement, whether the law was supported by public opinion or drafted so as to be enforcible or not, and that the end to be gained in a campaign for sanitary legislation was to "put over" the intended bill and that something was accomplished when this was done have also been far too prevalent. When to this situation is added the fact that the rapid growth of any special line of knowledge favors the development of those who mistake a working hypothesis for a proven fact or who allow their interest in a special but comparatively unimportant topic to lead them to regard it as one of paramount importance, it is not strange that the extremist and the hobby rider have too often exercised an undue influence in public health legislation.

The greatest single mistake has been the belief common to the medical profession for the last forty years that sanitary reforms could be accomplished by the passage of laws. This is all the stranger in view of the fact that a clear and definite note of warning was struck in this period by one of the leaders of medical thought of his day. In 1877, at the Chicago session of the American Medical Association, Dr. Stanford E. Chaille, of New Orleans, presented a paper on "State Medicine and State Medical Societies," which to the student of the development of state medicine in this country must ever remain as one of the clearest and most far-sighted papers ever presented before the Association. Discussing the necessity of systematic education of public opinion as a necessary precedent to the enforcement of sanitary laws, Dr. Chaille says: "It requires no great wisdom to enact laws, but great wisdom to enact on many subjects laws which can be enforced. The history of legislation is glutted with the enactment of laws which not only failed to accomplish the object intended, but which did accomplish a very different one, often bringing the object sought for into public contempt. Rarely do writers on state medicine realize the truth of the lessons taught by students of the philosophy of law-making, that there is a class of subjects in regard to which laws can be enacted in advance of public opinion, without fear of bad results—but that there is another class of subjects in regard to which no laws can successfully precede their public sanction, and if enacted, violation and contempt for them will ensue. Unfortunately, to this class belong such subjects as the regulation of the practice of medicine, compulsory vaccination, registration of vital statistics, etc., and their satisfactory disposal cannot be hoped for until an enlightened and organized medical profession exercises its influence on public opinion."

In spite of this clear statement of the problem, we have, as a profession, placed far too much confidence in legislative enactment as a means of social and sanitary improvement. This is partially due to the prevailing popular idea that the passage of a law in some way accomplishes something and that a law necessarily contains within itself the power for its own enforcement. A law is not a force and never can be. A law is simply a rule of action, a statement of the way in which a force acts or should act. In this country the only possible force is public opinion, the will of the majority. It has come to be recognized as axiomatic that no law which is not approved by a majority of the people can be enforced. As Dr. Chaille has clearly stated, the important thing is to convince the people and to mold public opinion. As soon as this is done, necessary laws will follow as a natural consequence. But with a convinced and aroused public, only a minimum amount of legislation is necessary. Public opinion can accomplish as much, if not more, than legislation in some lines, leaving to the law-making powers only the necessity of enacting and to the administrative officials the necessity of enforcing so much legislation as may be necessary to make public opinion effective.

But there is another and more serious consequence of the enactment of public health laws without the support of public opinion. Not only are laws so obtained generally ineffective, but their passage encourages the feeling on the part of the public that health legislation is a matter which is in the hands of physicians and that the people have no responsibility on this subject. It is an axiom in physiology that an unused function always undergoes atrophy. The more physicians relieve the people of the responsibility for securing proper health laws, the greater will be the difficulty in making them realize that they have any responsibility. We have, through shortsightedness in the operation of free clinics in our large cities, pauperized a large proportion of the people. Let us beware lest we pauperize them mentally by relieving them of the responsibility of protecting themselves from disease.

Not only has the growth of knowledge altered the relations of the state and the individual, but it has no less radically altered the professional relations between physicians and patients. The responsibility of the physician was formerly limited to the individual patient. This is no longer the case. The present day physician wants to know not only what is ailing his patient, but also how his patient acquired the disease, whether any other persons are exposed to contagion from the same source, whether the patient himself is a danger to his friends and relatives, and whether the disease will spread throughout the entire community or can be confined to the single case in hand. He owes a responsibility not only to his patient but to the community. He is not only the caretaker and medical adviser of the sick. He is also the guardian and protector of the well. Each practising physician is or should be a sanitary policeman for the protection of the community against contagion. In a few cases, notably state boards of health and a few of our larger cities, men especially expert devote all of their energy to sanitary police work as public health officers, but this does not and cannot take the place of the constant vigilance and cooperation of the mass of the medical profession. Yet because in previous generations the relations of a physician and his patient were entirely personal and because compensation was based on these personal relations, the public health police work of the medical profession, done for the sake of the community, is largely unrecognized and entirely uncompensated. In other words, physicians as a class have recognized their duty to the community before the community has recognized its duty to physicians. Careful reflection will, I think, sustain the conclusion that in this situation is found an explanation of many of the economic difficulties of the medical profession at present. That it is a transitory condition and one which will be remedied in the future admits of little doubt.

(To be Concluded.)

THE PHYSICIAN AND THE PUBLIC HEALTH.*

By Eugene R. Kelley, M. D.
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To no small degree public health as we now know it is the product of the physician's brain. In a sense, preventive medicine is as old as curative medicine, but in another and very real sense we may say that preventive medicine is scarcely older than the science of bacteriology, upon which it is largely based. At any rate, in the past third of a century the science of preventive medicine has gone ahead with such leaps and bounds that organized medicine, like many another parent of a precocious and rapidly growing child, seems in some respects to be bewildered and unable to see the true perspective in regard to her offspring.

From time immemorial the physician has been taught to consider the relation between himself and his patient as a confidential and personal one. As long as the field of medicine concerned itself practically exclusively with curative medicine, or mankind in the individual, this attitude was the best possible. But preventive medicine, or hygiene, does not deal with mankind as the individual at all, it deals with mankind in the mass and a wide publicity is the very essence of its being. The future success of preventive medicine depends more upon a wide realization and application of its already demonstrated principles by the many than it does upon brilliant new scientific discoveries by the few.

Not only in preventive medicine is the public now beginning to demand new light and leadership from the medical profession but, as straws tell which way the wind blows, so to the careful observer there are today many indications of a tendency on the part of the general public to syndicate and even to exploit the curative knowledge of the medical profession. There is today a measure before the people of this state, modifying the provisions of the Employes' Compensation Act which is significant of this tendency.

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The physician suddenly finds himself and his calling placed in the limelight. He is scrutinized more sharply each day by a public which is not by any means entirely sympathetic; a public which wonders just how much he makes, whether he is not using his present organization exclusively to raise the cry "faker" for the purpose of keeping those who have discovered other and more brilliant methods of healing out of their just due; a public which has been told that the whole medical profession wrings exorbitant tribute from the poor common people by bulldozing them into entirely unnecessary operations, by creating imaginary ailments, etc.; a public, in short, that has been systematically misinformed for years as to the character, motives, ideals and past achievements of organized medicine.

The organized medical profession of Great Britain could not see the handwriting on the wall. For years before the British National Sick Insurance Act was passed, the medical profession was given ample opportunity by Mr. Lloyd-George and his associates to have their own interests completely recognized, but they said, "The practice of medicine and the relations of the medical man to the public are individual questions. We refuse to discuss your act, we will not carry out the provisions of your act, and as a result your act can never be enforced." The result was that the act did pass and was enforced, but our British colleagues are not getting now their fair share of remuneration for the heavy work which the act imposes on them.

I cite this as an illustration. We are not now discussing why the medical profession does not stand as high in public esteem as it did in generations gone by when it was not contributing one-tenth as much to the real physical benefit of mankind as it is today. We are now discussing the physician and his relation to public health. I believe the present is a peculiarly opportune time for the physician to concern himself with this subject as he never did before. I am bringing the subject before this body not only from the old idealistic standpoint from which this topic has practically always been presented to medical audiences, a rehearsal of how great a service to mankind preventive medicine has been and of how much greater it will be in the future, glorious and true though these aspects of the subject are, but from a more definite and practical, even a more selfish but entirely honorable standpoint, of what public health should do for the physician.

Vaughan's statement is very true that a medical education costs more in time and money than that demanded by any other profession, and that the emoluments of the average practitioner have decreased as preventive medicine has become more effective, and that no other profession pays so heavily the great cost of eradicating infectious disease as does the medical profession, but that this is the very function of medicine and, hence, no sacrifice should be regarded as too great. But the truth of this statement in a broad sense is no reason why the medical profession should stand aside and allow others to reap whatever modest reward, financial or other, is due for the present administration and future development of preventive medicine. In other words, the first part of my theme is the general proposition that, granting to the sanitary engineer, the public health nurse, the non-medical laboratory worker, the non-medical statistician, and the sociligist their fair share in the administration of public health, there should be a considerable field left open for the practice of preventive medicine as a specialty for the full-time, life-long medical sanitarian.

It is just here that the medical profession has failed. Up to the present the position of health officer has been regarded far too much as a space-filler, or side line, as something which a very busy practitioner might accept for a brief—a very brief—period and discharge the duties appertaining thereto in any of the odd moments that a busy practitioner can find. The result is that the position of health officer, one which certainly should be of equal dignity with that of a county judge, county engineer, or county superintendent of schools, becomes the football of local politics and one which is not open to serious consideration as a highly differentiated medical specialty, except in most isolated instances. There is no branch of medicine in which careful specialized training is needed to qualify to practise it more than in health administration, and there is certainly no branch where so little training is usually expected or considered necessary by either the profession or the public.

Had the medical profession of this country been united on this point, it might have placed the position of "the medical officer of health" on a proper level with other medical specialties. It has not only failed to do so but has gone still further and established the most unprofessional custom of submitting bids for positions as city and county health officers. It is no wonder that the general public does not give proper regard to the position of health officer, when it witnesses annually or biennially the spectacle of a large proportion of the local medical profession submitting competitive bids for the position of guardian of the public health, and the successful contestant lightly binding himself to execute the heavy duties which the law imposes upon him relative to the health and safety of many thousands of people, for $50, $25 or even $10 per month. The natural result is a health officer, getting little, does not consider himself under obligation to perform any duties beyond those which he cannot avoidably escape, a certain degree of cheapening of the dignity of the entire medical profession, and communities entirely unprotected, so far as their health departments are concerned.

The general conscientiousness of the medical profession and the general intelligence and good sense of the American people do manage, as a rule, to keep epidemic diseases from running at large, even under such a system or lack of system as this, but this does not alter the fact that the public health is not intelligently watched and safe guarded. Furthermore, the control of contagious disease is only one part—I had almost said a minor part—of the duties of a modern sanitarian. Industrial hygiene, school hygiene, rural hygiene, vital statistics, routine and research laboratory work, housing, ventilation, sanitary control of food stuffs, health education and a score of other important subjects must be handled by the up-to-date health department.

Inasmuch as it is principally through the discoveries of medical men, offered as a free gift "without money and without price" to mankind at large, that the old time prevalence of contagious disease, the financial sheet anchor of the doctor of the old school, has so generally abated that the average present day practitioner feels the ensuing financial loss of income distinctly, is it unfair or unreasonable to ask that the public which has thus been benefited return to at least a portion of the profession, who have been specially trained to render expert health service, a fair living in return for still greater protection, not only against communicable diseases but the more fundamental dangers to health environment, physical overstrain and the social and moral evils that are most certainly sapping the fecundity, longevity and moral stamina of this nation today? I believe it is not and, what is more, I believe the public is willing and glad to begin to do its share as soon as organized medicine, on the other hand, shows that it can deliver the goods. The first fundamental necessary to this end is a raising of the standards within the profession as to what constitutes a health officer.

There are now, if I remember correctly, in this state nine supreme or state judges and forty superior or county judges. The state pays in salaries, for the officials which the legal profession furnish, about $130,000 per year. The counties, outside of what the cities pay independently, pay at least $150,000 more. All these forty-nine judges, beside a considerable number of other representatives of the legal profession, are entirely or practically full time officials. There are five full time medical health officials in the state. The state health commissioner, the Seattle city health commissioner, the Spokane city health officer, the Yakima county and city health officer and the medical supervisor of the Seattle schools.

I am not in any way insinuating that these judicial and legal officers are overpaid—most of them are underpaid—or that they are not necessary as long as our laws remain as tortuous as they are at present; or that they are not honest, conscientious officers for the most part, giving full and fair returns in service and work to the public that pays their salaries. All I am arguing is that I am eccentric and peculiar enough to believe that the people of this state would get just as much, yea, better return for their money if they were employing, say half as many specially trained conscientious sanitary specialists to look after their life and health interests as they do for their legal specialists to look after their property and safety interests.

As a slight hint as to how this can come about, I would like to leave this thought with you to digest at your leisure. Did you ever, anywhere, at any time, hear of the legal profession of any county submitting competitive bids for the purpose of getting a county judgeship?

There is another respect in which I believe the medical profession needs to get a little more wide-awake, if it is to reap the full reward of the future possible developments of preventive medicine. The medical man must realize that the sanitary engineer, the non-medical laboratory expert, the food chemist, the sociologist, even the undertaker, and above all the public health nurse, is in preventive medicine to stay. Failure on the part of the medical profession to meet their new colaborers in the vineyard half way, is not going to hurt them much, it is not going to lessen their esteem in the eyes of the public, but it is today and will continue to lessen the public esteem and respect that still remains for our profession tremendously, more than you men who are in active practice can ever realize. I have heard more than one eminent physician in national gatherings express in no unmeasured terms the fear that, unless the physicians awake and realize that we are living in an age of changed ideas and ideals as regards bodily health; drop their supercilious attitude of assuming that without special work or study in public health, simply because they are physicians, they inherently and of necessity know more about every phase of public health than the engineers, the social workers, the statisticians, and the nurses who have devoted months or years, as the case may be, to intensive study and practice of special branches of public health work; see to it that assured public health positions with moderate but living salaries are made available for the medical men who are fitted to fill them, and then that a certain proportion of medical graduates are really and thoroughly fitted to fill the positions; unless all these things are done the days of the physician as an important factor in preventive medicine will soon be numbered, and the public will more and more put its dependence for health protection into the hands of the engineer, the sociologist, the biologist and the nurse, who are taking the subject seriously and are making good.

In closing I can do no better than to quote again from that masterly president's address, of that truly great physician Vaughan, when he says: "Is the medical profession of the country prepared to do this work? If I mistake not, our profession will soon have wide opportunity to demonstrate its usefulness in this direction and, if the public makes this demand, preventive medicine will have the opportunity to do a patriotic service which has never come to any profession at any time."

POLITICAL AND ECONOMIC ASPECTS OF MUNICIPAL SANITATION.*

By J. S. McBride, M. D.
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Politics mixed with sanitation makes an especially dangerous compound. Sanitation has often been used as a highly effective political club. Just now it seems to be political economy which is seeking a partnership with sanitation, and at times this seems likely to prove merely another cloak to cover up things which, without the magic name of sanitation, would not be tolerated.

The greatest asset, however, of the modern public health movement is public confidence. Almost all enterprises looking toward public benefit have clinging to them features of more or less dubious wisdom or promise, but the promotion of public health is acknowledged to be so pressing and so important that to it are cheerfully given extraordinary prominence and support by the public as a whole. The time has passed when this attitude of cheerful acquiesence in, and ready submission to, the mere dictates of sanitarians will be continued without cause being shown for sanitary ordinances, especially necessitating expenditures of money for improvements, etc.

If public confidence be the best asset of sanitation, then it should be zealously guarded, lest it be abused and weakened. It may be damaged, for example, by the extravagant claims of enthusiasts in holding out the hope that tuberculosis may actually soon disappear, or by the activity of pure food apostles who place food purity at the head of the list of all sanitary endeavors. Extravagant claims of this nature also, in a measure, prevent health officers throughout the country from getting sufficient funds from the public treasury to carry on the necessary public health work. How often we see a health officer certify to the needs of his department, setting forth clearly and explicitly what the interests of this particular field require, and the consequence of failure to meet these community needs, and then find how totally inadequate an appropriation has been made by the public authorities to carry on his particular work. The honest and conscientious distribution of public funds, always open to public inspection and criticism, will in time, we hope, overcome some of this prejudice.

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There is no question but what all matters pertaining to health and sanitation in each state and larger cities should be handled by full time health officers, removed from politics as far as possible, and in the very near future we hope to have a national Department of Health with a representative in the cabinet. Then a system can be worked out by which all health officers in both state and cities of the first class can be filled by men who have had special training along these lines, and be under the direction and control of the federal department. We are gradually coming to a proper appreciation of the work of health officers and, when specially trained men who devote their entire time to the work are handling these problems of public health from one end of the United States to the other, it will be possible to do team work in the eradication and in the control of many of the communicable diseases.

Some of our leading medical colleges, as Harvard, Pennsylvania, Wisconsin and Michigan, are now giving complete and separate courses to students and the degree of Doctor of Public Health is conferred. The underpaid, half-time health officer of the United States is one of the jokes perpetrated on the community by the political bosses, and we trust will soon become a thing of the past.

Our knowledge of infectious diseases has advanced with great rapidity, but there is no question that the solution of many problems which now baffle investigators will come through carefully organized work. In solving problems in connection with many infections, more is needed than merely to study the disease in the laboratory. It is necessary to have all the different phases of the disease studied at the same time and have the work carefully correlated. The method of attacking health problems in any community with a view of solving various questions in regard to it is the one from which in the future we may hope to obtain the greatest amount of success. We must get the location of the disease by enlisting the services of every physician who practises medicine. Making use of trained investigators in following this information and the study of data thus obtained by experts in various lines of science, and the study of the various features of the disease, would seem to promise a solution to many of these serious problems which confront all health departments at the present day. We are like a mob sweeping across the country looking for public and private health. Obviously the first thing that is going to happen tomorrow is better education, so that we shall know what we want and where to place the emphasis, and then better organization.

There is also a growing recognition of the relation of public health to the economic development of the community. It is being realized more fully how fundamental is health to the economic independence of the family and of the individual. In a recent classification of 6,000 dependent families, which were given relief by one of the large relief organizations in one of our Eastern cities, it was found that in 40 per cent. of the cases the cause assigned, which forced these families to apply for aid, was lack of health. It is the general experience of relief organizations that this factor is more important than any other in causing the economic dependence of those families.

We are thus growing more and more conscious of the fundamental importance of health, not only to educational and economic independence, but also to the happiness and well being of the individuals in society and also to life itself. It is, therefore, appropriate that private funds should rally to the aid and support of public health projects. Splendid examples of this are to be seen in the case of the Sage Foundation, where a certain amount is devoted to the promotion of health, the Rockefeller Institute for Medical Research with its large resources, devoted exclusively to the promotion of public health, and many others of a similar kind. Private associations of various kinds are springing up which have as their object the prevention of disease and the conservation of health.

The following motto has been set and should be copied widely: "Public health is purchasable." If public health be purchasable and fundamental to social independence, then every possible effort should be made to interest the benevolent public to the end that the necessary funds may be secured. For what better function than by supplying the purchase price of health can be performed by such funds. That public health is purchasable, within certain limitations, and that a community can determine its own death rate, have been demonstrated thoroughly not only in Panama but in our own cities and villages at home. Any city with a low death rate has an advantage commercially which cannot be ignored, and will well repay any outlay from a commercial standpoint alone.

It is estimated that for each death annually there are on an average of two persons constantly sick during the year. Applying this estimate to the United States, in which about 1,500,000 persons die per annum, there are at all times about 3,000,000 seriously ill. Out of this number at least 1,000,000 are in the working period of life. Assuming that average earnings in the working period are $700 per year, and that only three-fourths of the million workers would be occupied, we find over $500,000,000 as the minimum loss of earnings in these United States in one year from sickness alone.

Again, taking the number of deaths, namely 1,500,000 per year, we find that 42 per cent., or 630,000, are annually preventable or postponable and, since each prevention would save $1,500, which amount I have taken as a very conservative estimate of the value of a life, some authorities claiming as high as $5,000, the national annual and unnecessary loss of capitalized net earnings from this source is about $1,000,000,000. The statistics of the Commissioner of Labor show that the average expenditure in working men's families, on account of illness and death, amounts to $27 per annum. With 17,000,000 families in the United States, this makes the total bill for caring for illness and death $460,000,000, without including loss in wages which would at least total as much more. So the actual economic saving annually possible in this country by prohibiting needless deaths, illness, serious and minor, and needless fatigue, is estimated conservatively at one and a half billions of dollars. In tuberculosis alone there are 500,000 cases, of whom about half are totally incapacitated. Each municipal community is losing in exact proportion to these figures, taken of our country as a whole.

What are we going to do in order to reduce this economic loss? Many things need to be done, and among them are the following: Municipal boards of health need to have more powers and more support in public opinion. They should devote their energies and resources to the protection of the people from disease. They should provide more and greater laboratories for research in preventative medicine and public hygiene.

Provision should be made for better vital statistics, without which it is impossible to know the exact conditions in an epidemic. Mortality statistics are absolutely necessary, but above all the great prerequisite to success in checking and controlling disease is the knowledge of its morbidity.

We need more prompt notification of communicable diseases, for every case of one of these diseases, which is not properly isolated, acts as a focus from which the disease may spread and each additional case starts a new point so that, in spite of the efforts of the health authorities, these diseases remain epidemic continuously in our larger cities.

If every physician would constitute himself an associate health officer, these diseases would become, if not entirely eradicated, at least reduced to a minimum. Each practising physician constitutes the picket of all health organizations. He gives the first notice of the presence of any communicable disease and upon him rests the responsibility of discovering and reporting new cases as they occur.

We need more cooperation. Municipal boards of health need sufficient legislation passed and the enforcement of the same, to the end that our streets and alleys may be kept clean, garbage properly removed, sewage properly disposed of, air pollution of all kinds prevented. We need to zealously guard our water supplies, make standards for milk purity and rigidly enforce them; provide for the inspection of all food supplies; make and enforce stricter building laws, especially as relating to stores, shops, lodging houses and tenements, to the end that dark room tenements may be eliminated and all tenements provided with certain minimum standard requirements as to light, air and sanitary arrangements.

Industrial and commercial establishment employers are beginning to realize the value of healthy employes, from an economic standpoint, and will greatly aid this health movement. They realize the effects of bad air and lack of necessary sanitary conveniences upon workers in factories, for every hour lost by the illness of one whom they have trained to do a certain work means a monetary loss to the employer.

There are many others but I trust those enumerated will remind us that we, as physicians, have a duty to perform in trying to prevent this 42 per cent. of preventable or at least postponable deaths, and I believe that, if we will estimate what these human beings are worth in dollars and cents alone, it will many times overbalance any appropriations set aside for health work in any of our municipalities. Lastly, it should be borne in mind that the dollar laid out on sanitation is not an expenditure but a loan which will be returned an hundred fold.

CAUSATION AND PREVENTION OF GOITRE.*

By J. R. Brown, M. D.
TACOMA, WASH.

We are still at sea regarding many of the causes of disease in general. When it comes to the question of the cause of goitre we are way out on the bounding billows. And it is not because honest and earnest investigators have not tried hard to solve the problem. Many ingenious explanations have been made but most of them have not made good in the light of searching critical analysis. In this paper we have to content ourselves with a short resume of the conclusions of some workers in the field.

Bircher made an exhaustive study of so-called endemic goitre in Rupperswil, in Switzerland. He came to the conclusion that water from certain geologic strata was responsible for the universal thyroid enlargement of the inhabitants. So convinced were the local authorities that the source of the domestic water supply of the town was changed to one which Bircher had said would not produce goitre. A recent census of the town of Rupperswil was taken and 30 per cent. of the inhabitants are still with goitre and many of these cases are in children born since the water supply was changed. Still there is something mysterious about Rupperswil. A box of young rats was imported from Zurich and placed with the children in a goitrous family. After seven months and a half these rats were killed. One had pronounced goitre, three a tendency to it; two of four born there had pronounced goitres and one a tendency to it, while the fourth was doubtful. Another box of rats was given to a goitre-free family. The results were here negative. It is not the water here. It is more likely some other provoking cause, such as some obscure house infection.

Most exhaustive studies have been made by McCarrison, in India. He is convinced that goitre in Sanawar is due to living organisms in the drinking water and that the disease can be eradicated by supplying chemically and bacteriologically clean water. In a recent report he suggests that the infection may be of fecal origin. McCarrison further contends that goitre is in many cases congenital. Only one-third of the offspring of goitrous parents have normal thyroid apparatus, i. e., thyroid and parathyroid glands. Between 4 or 5 per cent. of such offspring are cretins.

Recently question blanks were sent to all physicians in Silesia in an endeavor to get a census of as many goitre cases as possible. Two hundred and fifty-one cases of goitre were thus listed, many of which came from distinct nests. The drinking water is here blamed for the conditions. It is easy to condemn drinking water. We all remember when malaria was thought to be water-borne or air-borne.

Again, the genital sphere comes in for its share of blame for the existence of goitre. In a clinic for women's diseases in Vienna, Wertheim states that enlargement of the thyroid was detected in 49 per cent. of the 654 pregnant women examined; only 21 had noticed the enlargement before the pregnancy. In four cases the children of women with goitre were born with much enlarged thyroids.

Albuminuria was found in 16.6 per cent. of 241 women with enlarged thyroid, and in 22.1 per cent. of 267 without. In 33 women with eclampsia the thyroid was enlarged in 31 per cent. Goitre is six to eight times more common in women than in men and there certainly is a physiologic connection between the internal secretion of the ovaries and the thyroid gland.

The most notable contribution to the understanding of the etiology of goitre has been furnished by Billings in the *J. A. M. A.* for Sept. 12 of this year. In this article is pointed out the great frequency of focal infections found in victims of enlarged thyroid gland. Billings does not say that all goitres are due to this form of infection, but diseased tonsils and alveolar abscesses, as well as sinus infections, should be sought and treated in every case of goitre. This practice is followed out very systematically at the Mayo Clinic, where every case of goitre seeking treatment is carefully examined for foci of infections and treatments of these, if found, is instituted often before any other measures are taken toward a cure.

Rosenow has found a Gram-positive diplobacillus-like organism in twenty-five out of thirty-two cases of goitre, mostly exophthalmic in man. He also found this twice in the blood of a man suffering severely with an exophthalmic goitre. He also found this bacillus in eight out of twelve goitres in dogs. At the rate the subject is being investigated we will probably soon get at more definite conclusions regarding the causation of thyroid enlargement.

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*Read before the Twenty-fifth Annual Meeting of Washington State Medical Association, North Yakima, Wash., Sept. 21-23, 1914.

When everything is sifted down the whole problem as to why we have unusual enlargements of the thyroids resolves itself to this. The thyroid enlarges in response to a demand for more of its internal secretion. In other words, the goitre is a compensatory hypertrophy. Whether this broken compensation is caused by deficiency of iodin in the food, or by specific infection, or by unusual demands of the internal secretory mechanism cannot be definitely stated at this time. One thing seems quite apparent, that nearly all cases of simple goitre suffer from want of enough or improperly elaborated internal secretion of the thyroid. Hence these cases, in the beginning at least, suffer from hypothyroidism.

Says Buford in reference to this very thing, "After being confused by so many contradictions in clinical and pathologic findings, I began to study each of my goitre patients with more care than I had been accustomed to doing and now believe that all goitres not associated with neoplasms have their beginnings as compensatory hypertrophies; that the varying local appearance depends on existing pathology; that both gross and microscopic appearance of the gland depends upon the stage and character of pathogenesis and not upon the duration of the disease; that constitutional symptoms appear in proportion to the need of the secretion; that most simple goitres are reasonably curable by use of thyroid feeding, and that glandular hyperplasia may be engrafted upon a goitre in any stage of development when suddenly or over a long period of time, through hypertrophy, the gland fails to supply the demand. This increases the secreting area and I assume that there is usually an automatic adjustment but, when there is not, I assume that glandular hyperplasia continues and is always accompanied by symptoms of hyperthyroidism. This idea is supported by the experiments of Marine and Halsted, who found that, upon partly dethyroidizing dogs, glandular hyperplasia in the remainder of the gland promptly followed."

As stated by Dr. D. C. Hall, (*Northwest Medicine*, July, 1914,) goitre is undoubtedly endemic in Western Washington. But why there are more large thyroids in Washington than in Oklahoma or Texas is hard to explain. When it comes to purity of water supply, the latter states have nothing on Washington. Possibly the small amount of sunlight in the mountain and coast parts of Washington might have something to do with it. The possible infecting organism may not survive the direct long-continued sunlight of the southern plains. Then, too, the stimulation of direct sunlight on the human body may act in such a way on the organism that less thyroid secretion is needed; hence no occasion for the first step, compensatory hypertrophy. Over-stimulation by sunlight resembles in many ways hyperthyroidism. It would be interesting to get a census of all goitres and then compare their distribution with the atmospheric conditions prevailing in each place.

For several years the writer was located in a populous community in Texas. Goitres were extremely rare there and even the usual compensatory or vascular engorgements of the thyroids of young women seemed much less frequent than in the Puget Sound country. The drinking water was mostly from rain-water cisterns and shallow wells. Part of the community was supplied by artesian water, highly mineralized. In fact, the water was bad anyway you looked at it. But, if the goitre excitant be an organic one, the atmospheric conditions in Texas, heat, bright sunlight and violent temperature changes were not favorable to its growth.

Reasoning from an abundant clinical experience, it seems reasonable to suppose that the infective agent or exciting material that causes enlargement of the thyroid gland does not act directly on the gland, but affects the system in such a manner that the gland must hypertrophy or enlarge to satisfy the demand for its peculiar internal secretion. We are convinced from a wide experience that, when the thyroid begins to enlarge, there is a state of deficiency of thyroid secretion—hypothyroidism. Thyroid feeding improves the health and reduces in a very marked manner the size of the gland.

The prevention of goitre would then resolve itself to purification of domestic water supplies by installation of hypochlorite plants and, perhaps, addition of iodin in minute doses to water for household consumption in goitrous communities. Focal infections of teeth, tonsils, adenoids and sinuses of head should receive prompt and careful treatment, especially in the young. Careful search should be made for hypothyroidism in the children, as thyroid feeding, if instituted in time, would probably prevent any marked hypertrophy of the thyroid gland.

THE PREVALENCE AND DISTRIBUTION OF GOITRE IN WASHINGTON.*

By D. C. Hall, M. D.
SEATTLE, WASH.

The compilation of statistics is usually a very arduous and unsatisfactory undertaking. They may be of great value and on the other hand, may be misleading and severely warp the truth. In doing this work I have kept ever before me the wag's classification of lies, of which there are three, placed in the order of their severity: a white lie, a damn lie and statistics. With this in mind we have attempted to classify the students who have entered the University of Washington during the past five years, according to the condition of their thyroid glands.

Realizing the importance of this subject to the Northwest and having in mind several persons and families who have moved away from Washington on account of goitrephobia, we have had anything but a tendency to boost the incidence of this ailment. We have not collected surgical cases nor made any attempt to determine the incidence of goitre outside the University. We hope in the near future, however, to have surveys made of several school districts, in which the examination of the thyroid will be made a routine measure, for it is around the ages of 6 and 7 that the pathologic process commences, as near as we are able to determine, and the time that is all vital in the prophylaxis of this ailment.

While 3,339 examinations are not sufficient to prove or disprove any problem, yet they may point the way, probably in the right direction. Figures of this character cannot become conclusive or even valuable until each county has provided several hundred examinations. Students who had lived in a locality for less than one year were excluded from that county. The ages of the students at the time of examination were from 5 to 6 years after the establishment of puberty, so that the idea that the enlargements were due to a temporary hyperactivity of the gland incident to this time could be safely ignored.

The enlargements of the gland were divided into three classes, perceptible, medium and large, and recorded as goitres. The large goitre is one that is readily noticeable, and cannot well be masked. The line here was quite tightly drawn and only those classed as large that gave some unmistakable subjective symptoms and should be operated on. The medium is one that is apparent when the neck is bared. The patient is conscious of it and usually has taken treatment for its reduction. The dividing line between the smaller type of this class and the larger of the next was usually decided by whether the patient was aware of the condition or not. The perceptible is one that gives a slight fulness to the neck and may be classified only by further inspection and palpation.

In detecting this condition the patient is asked to elevate the chin and swallow. First, by inspection, it is noted whether or not there is any enlargement that follows the course of the larynx, and then by palpation, with the finger or thumb first over the isthmus and then over the latter lobes, while the attempt at degultion is carried out. Any unmistakable enlargement thus noted is classed as perceptible. Very often in these cases the patient is aware of the enlargement and has attempted its reduction by treatment. If there be any doubt as to its classification, the patient is asked to blow quite hard to full expiration in the spiromoter. This procedure invariably engorges the gland to an appreciable extent if it be enlarged, while no change is noticeable if it be normal. We have tried to be very conservative in this condition and classed as normal all that did not show an unmistakable enlargement by inspection only.

This series consists of 2,086 men with the average age of 20 years and 5 months, and 1,253 women with the average of 19 years and 3 months.

Of the 1,253 women, 388 were affected, or practically 31 per cent., as follows:

272	classed as perceptible or	13.03	per cent.
92	classed as medium or	4.43	per cent.
10	classed as large or	.48	per cent.
374	total affected or	17.94	per cent.

Of the 1,253, 388 were affected, or practically 31 per cent., as follows:

294	classed as perceptible or	23.45	per cent.
85	classed as medium or	6.79	per cent.
9	classed as large or	.7	per cent.
388	total affected or	30.94	per cent.

Averaging men and women together it gives 24.40 per cent., or about one in every four, and if this can be taken as a criterion it means with a population of 1,141,990 we have 285,498 people affected in this state and in some areas, such as the eastern slopes of the Cascades, it may run as high as one in every three.

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Of the nineteen classed as large, four had a marked exophthalmus, one man and three women. They were strikingly of the plethoric type, large, so-called full-blooded and verging on the obese. But one, a girl, showed signs of a toxemia, and that only upon exertion or especially during excitement, at which time tachycardia, sweating and tremor became apparent. The exophthalmus was such in two other cases, one man and one woman, that complete closure of the eyelids was impossible.

The enlarged gland was symmetrical, as a rule, but when asymmetrical the enlargement was always on the right side. We did not pay very close attention to this until there appeared three cases in rapid succession, in which the enlargement was on the right side. Since then careful observation was made of the examinations of 582 men, of whom 96 had either a medium or perceptible enlargement. Of this number, nine, or 9.4 per cent., were on the right side.

It was attempted to determine the incidence of heredity, but this was found to be unreliable, as a healthy student was not so liable to give as accurate an answer to a question concerning the appearance of his parents as would a sick patient. In a series of 343 women, of whom 83 were affected, ten, or 2.9 per cent., gave a history of the malady in the family. The direct hereditary quality here is not such that much credence can be paid to it.

As to the distribution of the malady we find that it bears a rather constant relationship to certain geologic conditions. From the standpoint of the soil in the State of Washington, it seems to be confined to that part where the marine deposits of the eocene and myocene ages are still exposed, namely, all of the state excepting the southeastern corner, consisting of the nine contiguous counties of Asotin, Garfield, Columbia, Walla Walla, Franklin, Benton, Grant, Adams and Whitman. From these nine counties eight-two examinations were made with only three cases affected, or a percentage of 3.6. The soil of this area is alkaline, but the most interesting fact is that this entire area is covered with volcanic ash and lava. Thus the original surface is covered with a sterile mantle.

The tier of counties further west, running north and south, presents an entirely different spectacle. Here the land rises to the crest of the Cascades. Cultivation is developed as high as 3,000 feet in places and quite generally at 2,000. In the county of Yakima, out of seventy-nine examinations twenty-one were affected, or 26.6 per cent. Kittitas County on the north gave seven out of thirty-four, or 20.6 per cent., while Chelan, still further north, gave twelve out of thirty-six, or 33 1-3 per cent. Here are two areas, side by side, differing in soil and elevation, in marked contrast as to the incidence of goitre. If these small figures are verified by further observation, surely we have a favored condition here upon which to work for the solution of this problem.

West of the Cascades, Pierce County gives fifty-two affected out of 237, or 22 per cent., while King County gives 342 cases out of 1,983, or 17.3 per cent. The difference here, practically between Tacoma and Seattle, is noteworthy in view of the fact that each city has a different type of water system. Snohomish gives 31 out of 132, or 23.5 per cent.; Skagit 11 out of 57, of 19.3 per cent.; Whatcom, 19 out of 95, or 20 per cent. This tier of counties gives a smaller percentage than their neighbors on the east.

Here are two watersheds from the same elevation but with different climatic and soil conditions. The most striking comparison of these two areas that suggests a bearing on the subject is the water supply. On the eastern side of the mountains contamination with the soil is much more probable and settling reservoirs less frequent. Here again is a difference, pointing to a probable etiologic factor. Alaska and Oregon, each treated as a county, gave evidences of carrying out about the same ratio.

Thus, it is evident that *potential* goitres are endemic in Washington. This does not necessarily mean that one-fourth of our population will come to the operating table or even suffer from an abnormal functioning gland. It does suggest, however, on account of its widespread and peculiar distribution, that we have an enviable situation for the study and prevention of this common malady.

Brights Disease.—The use of sodium chlorid by hypodermoclysis and by the drop method by rectum is recommended in the treatment of nephritis and edema by H. Lowenburg, Philadelphia (Journal A. M. A., Nov. 28, 1914), who reports a number of cases. From his observation he says that sodium chlorid neither produces nor increases water retention in either the nephritic or non-nephritic. It is curative, he claims, in edema from any cause if the kidneys are not too severely damaged and it does not cause edema in marantic infants. When combined with an alkali and plenty of water its effects are good on all the symptoms of nephritis.

THE TREATMENT OF GOITER.*

By T. M. Joyce, M. D.
PORTLAND, ORE.

That this is an important subject to the medical profession, especially in the Northwest, is evident when you recall the number of goiters you see each day upon our streets. A brief outline of the development and causes of pathologic thyroid should not be out of place in a paper of this title.

The thyroid makes its first appearance in embryos of 3 mm. length, by an outpouching of a median body from the inner bronchial furrows. It is immediately behind the anterior portion of the tongue and as it descends in the neck becomes bilobed. In 6 mm. embryos it is completely separated from the floor of the pharynx, but its point of origin is marked by the foramen cecum. The normal thyroid is a bilobed gland, situated on each side of the trachea at its proximal end, with a larger right lobe connected by an isthmus and occasionally a smaller third lobe, the pyramidal, which is believed to be remains of the thyreoglossal duct. The blood supply is from the superior and inferior thyroid artery, branches of the external carotid and thyroid axis respectively and occasionally a third artery which enters the gland at the posterior median portion, the middle thyroid artery.

It is quite generally conceded to be a sex gland and in the higher forms of invertebrates has a duct which empties directly into the uterus. It enlarges at puberty in females especially. During pregnancy and at menstrual periods it enlarges. The statement has been made that, should the thyroid not enlarge during pregnancy, you will find albumin and casts in the urine.

That it controls development and early growth is a well known fact. The child born without a thyroid becomes a cretin and in adults loss of the thyroid substance gives you the condition known as myxedema.

Evidence shows that goiter can be produced by some water-borne cause. McCarrison, in his work in India upon goats, has done much to prove this. That intestinal toxemia also plays an important part is well known. Infection must also be considered, especially in exophthalmic goiter, and it is now the custom at Rochester to remove the tonsils in all exophthalmic goiter cases.

Most text-books give two types of goiter, simple and exophthalmic. Plummer and Wilson in their recent work have made a much more elaborate division of types. I shall not attempt to subdivide the exophthalmic or hyperplastic goiter group, but will change the term simple into toxic and non-toxic, non-hyperplastic goiters. I will not dwell on malignant glands, having been unable to find a record of a malignant goiter which has not recurred, usually rapidly, although I distinctly remember one case which went nearly three years before a recurrence was noticed. However, malignancy, when within an adenoma, should be treated radically.

The medical treatment of goiter, especially exophthalmic or hyperplastic, is fully as important as the surgical. It is a well known fact that the administration of iodin to adolescent goiter, the non-toxic, non-hyperplastic group, will reduce the size of the gland, yet great care should be exercised in that a mild adolescent goiter treated with iodin, both internally and externally, may become a most severe exophthalmic with hyperthyroidism and all its accompanying symptoms.

A very efficient method for treatment of adolescent goiters is in Lugol's solution, one drop three times a day, with an application of yellow oxid of mercury, a 1 per cent. ointment, upon the gland.

Cystic goiters and adenomas will not be discussed medically any more than would ovarian cysts or adenomas of the breast, and no one would think of treating such conditions with iodin or thyroid extract.

The toxic, non-hyperplastic group which includes the multiple colloid, degenerating adenomas, calcified and fetal adenomas, are a very interesting class, usually coming on in middle aged individuals with a history of enlarged thyroid from ten to twenty years, tremor, rapid irregular pulse, dilated heart, emaciation, loss of strength, frequently a metallic voice and a staring but not protruding eye. These cases have as high a mortality as the hyperplastic goiter. Iodin in any form is absolutely contraindicated in this class of cases. Rest, absolute quiet and fluids, as in any form of intoxication, with small quantities of digitalis, will work wonders with your patient until surgical interference can be called in.

Exophthalmic, toxic and non-toxic hyperplastic goiter, more often in young adults with a history of noticing enlarged thyroid and exophthalmus very shortly after the appearance of constitutional symptoms, which include rapid heart, dilation, flushed skin, sweating, restlessness, nausea and vomiting, loss of weight, exophthalmus, weakness in the extremities, and the gland usually not greatly enlarged but always having a thrill, is primarily a medical condition. The treatment is rest in bed, an ice cap to heart region, a liquid diet and fluid per rectum. To those that have vomiting and diarrhea, subcutaneous fluid should be given. The body should be kept warm, almost perspiring, that the skin may eliminate toxins. Morphin for the restlessness is sometimes very beneficial, again it seems to aggravate the condition.

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The administration of thyroid extract to cretins and patients suffering with myxedema shows remarkable results, but outside of these two conditions and tetany cases, where it is used with calcium salts, thyroid extract has very little use in treatment of goiter. The same can be said of serum treatments, having a mortality of 6 per cent, which are advertised throughout the country.

The surgical treatment of goiter now, as compared to fifteen to twenty years ago, demonstrates one of the biggest advances in surgery. The first successfully removed goiter in America was done by Dr. William W. Green, in the old Medical Building in Ann Arbor, Mich., in 1867, and Gross denounced it as butchery rather than surgery. (My authority for this statement is Dr. V. C. Vaughan, dean of the U. of M. Medical School and president of the A. M. A.) Today with newer methods of technic and greater knowledge in the preparation and selection of operative cases, the mortality has gone from 60 per cent. to less than 2 per cent., equal to or lower than that of any other branch of major surgery.

Cysts and adenomas should be removed as soon as possible. It usually can be done without cutting the sternohyoid and sternothyroid muscles, and is a comparatively simple and safe operation. The substernal goiters are usually of this type, and they are much more frequent than was formerly supposed, as demonstrated by the x-ray, dilated superficial vessels and difficult breathing. It is fortunate that this class of cases consists of adenomas and cysts, as it permits of their enuleation with very little danger to the intrathoracic vessels.

The large degenerating, colloid, calcified and multiple adenomas, the true toxic goiters, are best treated by the double resection method of Mikulicz with a few modifications, as separating of the isthmus first and saving of the capsule and portions of the gland close to it. This operation gives a very good cosmetic result and it is almost impossible to injure the recurrent nerve and parathyroids. It is a somewhat more bloody method than the removing of one lobe and resecting part of the other. This operation is beautifully described by Balfour, in the May *Annals of Surgery*.

Remembering that exophthalmic goiter is a chronic disease with acute exacerbations, and that the time for surgical interference is during the quiescent period of the gland, I believe, basing my opinion upon hundreds of cases in the Mayo Clinic, that all exophthalmic cases should have a primary ligation of the left superior pole of the gland. This can be done easily under novocain and, if the patient shows no reaction, will only delay them from four to seven days. However, should there be considerable reaction, increase in pulse rate, nausea, vomiting and restlessness, then ligate the right superior pole from five to seven days after the primary operation. Allow your patient to go home and in four months return for thyroidectomy.

Ligating the vessels does not make the actual operation later easier. In fact it seems to increase the hemorrhage from every point, but it lessens the risk to your patient and after all that is what interests the surgeon most.

Up to May 1 of this year at Rochester, there have been only two deaths from thyroidectomy, following ligation of the superior poles, in all their thousands of operations. It will occasionally happen that you dare not attempt a ligation. Then the boiling water injection, after the Porter method, may benefit your patient enough to allow of ligation a few days later.

All operative cases should have the vocal cords examined, receive atropin 1/150 gr. and morphin 1/8 gr., and the exophthalmic goiter cases 1/200 gr. of scopolamin, two hours before going to the operating room. As to anesthetics, ether and local anesthesia, and again a combination of both work very well. Drain all cases for twenty-four hours, avoid all cathartics both before and after operation in exophthalmic, toxic and hyperplastic goiter cases.

MEDICAL TREATMENT OF GOITRE.*

By Caspar W. Sharples, M. D.
SEATTLE, WASH.

In this day, when so much attention is being paid to surgery, it seems that medical treatment is almost forgotten. I was asked by our president to write a paper on medical treatment of goitre. My promise led to an investigation of a good many medical journals, only to find that most articles contained therein, especially of recent date, bore not upon goitre, but upon exophthalmic goitre, and the surgical treatment of that malignant type and the simple form. The present day literature, such as falls into the hands of the ordinary man who has to work at his profession, then leads one away from this primary topic, i. e., medical treatment of goitre.

Ochsner and Thompson state the case well when they say that "it seems important to bear in mind that all forms of non-traumatic and non-malignant diseases of the thyroid gland are primarily medical." They also state that it is convenient for the surgeon to fall into the routine of believing all cases surgical, since those that come to him for treatment have all tried medical means which have failed before he has seen them, and hence the conclusion that it always fails, when, as a matter of fact, a larger portion of cases of goitre never come to a surgeon's observation because some disappear spontaneously, while others get well after dietetic, hygienic and medical treatment. There may come up the question of the permanency of the recovery after such means. It would appear from records that have been kept that these cases stay well. Reports of the ordinary run of cases are not available, but those made to illustrate some particular form of treatment bear out the statement that many are permanent.

At or about puberty there is often seen a goitre in young women that may or may not continue to enlarge. There is a close relation of some kind between the sexual organs of the female and the thyroid gland. This is marked at puberty by the adolescent goitres. It may be manifest for years in the enlargement of the gland at the menstrual periods, and quite often by marked enlargement of the gland or of an already existing goitre during gestation.

For the adolescent goitre of girls there is practically nothing to be done. These enlargements gradually disappear after the menstrual function has been fully established. However, it is not possible to foresee, except by waiting, which of these are just the simple enlargement of this period and which are true goitres in their incipiency. Hence, I believe that when these cases are presented to us we should especially look after the hygiene and diet of these girls and possibly resort to some medical means. Iodin in some form is no doubt safe at this period and possibly thyroid extract. Yet of the latter we have much to learn no doubt, and it might be safer to try it out at some other period of life than that in which a girl's life is changing into that of a woman.

A clue to treatment may always be gained by a study of surroundings. Goitre is endemic, probably depending on water bearing some element that affects the gland. It has been recommended that people acquiring a goitre in such places should move away for the benefit of a change in drinking water and a change in the air, though this latter has nothing to do with the improvement if any occurs. If it be not possible to change location, a change of drinking water should be tried. This is best accomplished by using distilled water.

Iodin has been used in one way or another for years and no doubt has done more than any other drug. It has done so much, or so much has happened after its use, that many patients ask if iodin should not be painted on the growth. Just how much iodin may be absorbed into the system from the area covered by painting a goitre I do not know and am skeptical about that part of its value. It is also used in ointments and with the same good reports. But there can be no doubt that many cases change after the internal use of iodin in some form, continued for a long time.

There is, however, the same query in many minds about the effect. If it benefits one group of goitre cases, why does it not benefit another group? It has been stated that certain groups recover spontaneously. Perhaps, then, many cases that have had iodin painted and administered would have recovered had it not been administered at all. Iodin has such a firm grip on the minds of our profession that many have not been content to use it in simple goitre but have used it in exophthalmic cases with most disastrous results. Clinically it has been shown that in goitre iodin produces hypersecretion of the thyroid gland. To administer iodin, then, to a patient who already has hyperthyroidism only adds fuel to an already disastrous fire and the hyperthyroidism becomes worse so long as the iodin shall be administered.

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There are some goitres that begin and act as simple, which for some reason assume the exophthalmic type. While it is not possible to say this, that or the other case of goitre is to become exophthalmic, still the fact that iodin promotes hypersecretion should lead every man who treats goitre with iodin to study his cases carefully to avoid the possibility either of causing a case to cross over the line of the two types or of renewing the activity of a gland that has ceased over secreting and is apparently only a simple goitre.

Iodin may be used for its local effect with electricity. On one pole is placed a sponge or cotton saturated with tincture of iodin. This is placed on one side of the gland and the opposite pole on the opposite side. These seances are repeated twice a week. Many recoveries have been reported from this method. One of my colleagues told me of this treatment, claiming to cause almost all glands to subside. So I tried it and had no results at all.

Iodin has been called by Kocher a thyroid tonic. "It stimulates the morbid gland to action, provided the condition is one of altered function and retained secretions. It cannot be said to remove the cause of the disease directly, so that its specific action is peculiar."

The mystery attached to the ductless glands for many years led to a hearty welcome of animal therapy. Comparatively soon its effects were tried on the thyroid with remarkable results, though by no means constant. Today it is largely empirically that we administer thyroid extract. It was discovered that the thyroid function was deficient in cretinism and thyroid gland in some form was fed to these people with the well-known results.

In simple goitre it was administered in doses of varying sizes and with varying results. Soon after its use had been suggested a young man came to me with a large, rapidly-growing goitre and, knowing little of thyroid extract, I gave him five grains three times a day with the result that in two months his goitre had nearly entirely disappeared and still remains so, but the treatment almost killed him. He went away from town a part of the time and I the other part, so that he was not seen after the first two weeks. He lost flesh very rapidly and to a great extent; his pulse was rapid; he was short of breath; his hands shook; he broke out into a sweat easily. In short, he was a type of hyperthyroidism. After this one case, I have used thyroid in all simple goitre cases, i. e., those in which the cystic element was not manifest but never with as marked and complete results as in this case.

Many cases show improvement, more or less permanent, though some have a recurrence and again take thyroid for a time. For my own part, I have not been able to foretell just which cases will be benefited. Goitres that are recent in their growth, in young people, and of the parenchymatous or hypertrophic type, seem empirically to offer the best chance of improvement, while old colloid or other cystic goitres are not cases that should lead one to expect any good results. Yet it must not be forgotten that all of the enlargement of the gland in the colloid type does not depend on the colloid cysts but also on the hyperthrophy of the true gland tissue. Hence, some disappearance of the gland tissue might be looked for.

Thyroid extract is contraindicated in all cases of hyperthyroidism. It is to be remembered that there are transitional cases and that, either from a lack of accurate history or careful diagnosis, thyroid extract having been given, it might cause a renewal of hyperthyroidism, or that a case that appears to have been a simple goitre might be pushed over the line. It behooves one who gives thyroid extract to commence with small doses, to see the cases at short intervals, to instruct the patients as to what symptoms should cause one to report earlier and to increase the dose only after a satisfactory probation period has passed. Again, the fact that thyroid extracts are not constant as to the quantity of the active principle that they contain leads to caution in administration.

Some combination preparations have been put on the market. It is rather probable that they bear no powers not found in simple thyroid preparations. There is one, iodothyoin, containing iodin and thyroid, that is said to bear no superiority to iodin.

Various forms of injection have been used. Ochsner testifies to the success of Gunn's treatment with injections of carbolic acid directly into the substance of the gland, saying that he had followed some of these cases for twenty-five years. I once had the pleasure of seeing some of these cases, in which Dr. Gunn demonstrated the method and exhibited cases that were making good progress. Iodin preparations, too, are injected. It is said to be dangerous. The tincture of iodin should never be used. Iodin should be introduced as iodoform or potassium iodide. Iodin has been injected into cysts for other reasons. Iodin is used by injection only in those cases in which it seems to have failed to reach the gland when administered by the mouth.

Electricity of itself has been recommended for the treatment of goitre, but its chief use has been for the exophthalmic type. All currents have been passed through the gland with indifferent success. Faradism should have no advocates. The galvanic current might be expected to result in some good, simply by stimulating secretion and absorption. Electrolysis, too, has been practised by some—resulting in a few instances in reduction of the size of the gland. The use of high frequency current has been followed by some benefit.

Then comes the x-ray treatment to claim favor. As in all other forms of treatment we find some good reports and some poor ones. Some do not claim success, report damage done, claiming that operations are made more difficult on account of the changes around the gland.

Dr. George Dock, in Osler's Modern Medicine, states what appears to be something of a keynote to the observations on the treatment of this and perhaps many other conditions. He says that "Goitres amenable to iodin subside quickly under x-ray treatment." He does not say though that perhaps it was not the treatment at all. That leads one to suspect that goitre may depend on some condition of the bodily economy, and that when, for some reason, that has been corrected that the goitre itself will change. Surely this is exemplified in those goitres in the development of womanhood. It is like much other medical treatment—"post hoc propter hoc," without any further reasoning. If medical means fail and the goitre is causing any trouble, there is nothing except surgery for those cases, and that should, like other operations, be resorted to while the surgeon can more safely practise his art. I would not have you think that one should just watch goitres when presented. All surgeons bear witness to the fact that the majority of cases that come to them for operation have been treated medically for some period, and that many cases have gotten practically well without their intervention.

THE PRINCIPLES OF MEDICAL TREATMENT OF GOITRE.*

By Frederick Epplen, M. D.

SPOKANE, WASH.

In presenting a paper on the medical treatment of goitre I feel that a certain apology is due, as my personal feelings are strongly in favor of surgical treatment for most cases that need attention at all from the medical man. There are, however, several functions that the medical man can perform in connection with disorders of the thyroid gland. They may be summed up under the following six heads:

(1) Restraint exercised upon a too aggressive surgery.

(2) Proper clinical classification of cases.

(3) Preparation of thyrotoxic cases for operation.

(4) Postoperative care of cases not wholly successful surgically.

(5) The care of those cases that refuse surgery.

(6) The management of goitres associated with hypothyroidism.

Very little need be said under the first head except that there can be no doubt that a certain number of cases are needlessly frightened if not actually operated upon, where the condition in question is but a physiologic hypertrophy. During the past year we have seen two cases in young women, one an adolescent high-school girl who had had pictured to her the horrors of a fully developed Graves' disease as her fate in the near future. Occasional observations during the past six months have confirmed our opinion that hers was a simple pubescent enlargement of the gland, and that its return to normal was but a question of a short time. Her mental relief need not be pictured to be understood.

A second case, that of a very young married woman, was equally ridiculous. For the same condition she had already planned and contracted for a six months' course of "serum treatment combined with electricity." In justice to my colleagues I must say that both had been in the hands of men who should be classed with the rankest of quacks.

A third case from the south central portion of the state was that of a woman just beyond thirty who had a small cystic goitre for several years. The gland was but very slightly enlarged, caused absolutely no dyspnea, had not caused cardiac changes and could be given very little consideration from a cosmetic standpoint, being quite symmetrically enlarged by the two cystic masses. The overlying skin had been faradized and otherwise mistreated until permanent pigmentations had occurred in the skin; the cosmetic viewpoint had assumed a serious phase; the cystic goitre was still present. Further comment is as surely unnecessary as further citation of similar cases.

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*Read before the Twenty-fifth Annual Meeting of Washington State Medical Association, North Yakima, Wash., Sept. 21-23, 1914.

The question of clinical classification is clearly limited to a study and identification of the functional disturbances present. Proper pathologic classification has but very little clinical value except in the determination of malignancy.

A malignant goitre is easily diagnosed with reasonable certainty even in its very earliest stages, if it be borne in mind that benign strumata are not the source of complaint until after a very long period of time, except there be very evident circumstances to account for them, such as tracheal or venous compression by small intrathoracic or otherwise anomalously placed enlargements. Early, inexplicable respiratory, laryngeal or other local disturbances, even without rapid growth, speak strongly for, or should lead to great caution before excluding malignancy. Such cases demand immediate extirpation, even though the typical induration be absent.

In such cases small, inaccessible parts in the depth of the gland will be found to have become malignant and to have involved the underlying respiratory organs by contiguous inflammatory reaction, if not true neoplastic invasion. Simulation of maligancy by other conditions, notably inflammations, whether in normal or strumatous glands, are bound to be encountered when diagnoses are based upon such radical principles. One such case was seen by the writer about a year ago, the inflammation having been excited by repeated injections of tincture of iodin into a large cystic goitre. Severe toxic symptoms as well as respiratory disturbances promptly subsided after incision of the gland.

In attempting to determine the presence of proper, hyper- or hypofunction of this gland we are surrounded by numerous difficulties. The true function of the thyroid gland being unknown, we have no direct means of making functional tests to arrive at its efficiency or inefficiency as the case may be. Kocher and his associates, especially Elving, Robert and Kottmann, have worked out certain means of arriving at reasonably certain conclusions on this point. Three years ago these investigators reported their original findings to the Deutsche Gesellschaft für Chirurgie. Since then they have added abundant evidence to their original reports, founded upon a rich clinical material. Nor is corroboration by other workers, notably the Viennese school, lacking. Their studies, while not limited to the blood, concentrate themselves upon this fluid because of the simplicity of the tests necessary.

In their first work they reported the finding of leucopenia with relative lymphocytosis in thyrotoxic cases almost without exception and strongly intimated that this finding, in suspected cases, was diagnostic. Considerable criticism was called forth notably by Dutch writers who reported the same findings in myxedematous cases. Encouraged to further studies by these adverse findings, they soon found themselves wrong in the details of their original conclusions, but asserted that the finding of a leucopenia with relative lymphocytosis in thyroid disturbances pointed absolutely to a disturbance in function, either hyper or hypo, a statement now almost, if not quite, uncontradicted. Kocher, in a more recent communication, in reply to certain adverse criticism, makes this blood finding a sort of ultimate diagnostic refuge in all doubtful cases of secretory disturbances. If the leucopenia with relative lymphocytosis be present, he states with considerable emphasis that this, in the absence of all clinical evidence, may be taken as sufficient evidence of secretory disturbance in a gland pathologically enlarged. It does not settle, however, the direction in which the abnormality has gone, whether hyper or hypo.

We are indebted to Kottmann, of Berne, and in a lesser degree to Eppinger and Hess, of Vienna, for certain diagnostic aids. The former discovered that thyroid juices have a kinase-like activity in promoting proteolytic processes, especially those of the blood. Therefore, in myxedema these kinase-like bodies are diminished, in thyrotoxic states increased; correspondingly in the former coagulation time is markedly decreased sometimes to one-third normal, while in the latter it is equally surely, though proportionately less markedly increased. The merciless bleeding of thyrotoxic cases on the operating table is, therefore, not altogether a matter of hyperabundant blood supply. While different methods of determining coagulation time give varying results, a given method habitually used gives sufficiently accurate results to warrant their consideration in arriving at diagnostic conclusions.

The work of Eppinger and Hess is less directly diagnostic. In applying, in principle, their "vagotonia" to studies of Graves' disease they, as well as their followers, are forced to the conclusion, so often reached by other investigators on varying bases, that this is a dys- rather than a hyperthyroidism, or better still a hyperdysthyroidism. Sympathicohypertonicity is manifested in this disease by the tachycardia, exophthalmos, positive adrenalin mydriasis, and alimentary glycosuria, while the vagotonic state finds expression in Stellwag's sign, arrhythmia, sweats, vasodilatation and diarrheas. It may be seen, therefore, that the thyroid is a gland which normally produces both vagotonic and sympathico-tonic stimulants. In a given abnormal case the symptoms depend upon which elements predominate.

All cases are sympathico-tonic in one symptom at least, viz., tachycardia. Various other symptoms of this group, notably the eye symptoms, may be absent; on the other hand, many cases have strongly vagotonic tendencies as has been previously suggested. Taking advantage of these facts, Eppinger and Hess have shown that the general sympathico-tonic state in Graves' disease may be revealed by applying what has previously been called Löwi's sign. In normal individuals adrenalin is incapable of producing mydriasis; it cannot overcome the normal pupillary tonus. When for some reason the sympthico-tonic state is exaggerated, e. g., experimentally, in dogs with pancreatic extirpation, clinically in certain cases of Graves' disease and pancreatic diabetes, adrenalin becomes a mydriatic. The sign is of considerable practical diagnostic importance in arriving at conclusions in doubtful cases of hyperthyroidism.

The frequency with which alimentary glycosuria occurs in this disease has suggested the use of this phenomenon as an auxiliary diagnostic measure. A positive finding is valuable, a negative much less so. Eppinger and Hess have placed Löwi's sign upon a firm basis as a diagnostic measure, and have revealed the philosophy of its mechanism. They have pointed out the corroborative value of alimentary glycosuria experimentally produced, a procedure simple enough in execution to encourage its frequent use. One hundred gm. of glucose (dextrose Merck) are taken sprinkled on a slice of buttered bread and the succeeding twenty-four hour period urine is collected and examined for sugar. It will be found present in the strongly sympathico-tonic cases, even though many other symptoms belonging to the same group be absent.

Iodin is sometimes administered in the form of potassium iodid, 15 gr. t. i. d., to doubtful cases over a period of a week or ten days with the hope of bringing out dormant symptoms. Its uncertain action, sometimes attended by the danger of exciting continued hyperfunction, has led to its pretty general abandonment, especially in territories where goitre is endemic.

It is not mere argument to speak of finding difficulty in determining the presence of Graves' symptoms; indeed it is sometimes a matter of some difficulty to differentiate between atypical cases of myxedema and Graves' disease. A case seen in contract practice about five years ago, that of a boy of about 17, is illustrative. For some months past he had noted enlargement of the thyroid gland, tremor and "nervousness." Graves' disease was suspected at once. While in conversation with him our suspicions were aroused by a remarkably slow speech and a mental torpor not in keeping with the other findings. More careful questioning and examination brought out the fact that he had no tachycardia or eye symptoms, and that his torpidity had made it necessary for him to abandon his semi-mental occupation as time-keeper and take up that of water-boy. While not particularly difficult, the case illustrates nicely the possibility of confusing the two types when the dysthyroidism is atypical, in part hyper, in part hypo. Not much is written about them, though they are mentioned in emphatic terms by Kocher, who says in substance: "I have sent to me quite frequently cases called Basedow which are in reality to be interpreted as depending upon hypofunction of the thyroid and, therefore, should be and by me are treated as myxedema." He speaks also of mild grades of both diseases in his older as well as in more recent writings, typical in findings if carefully studied, which often pass as normal individuals who are "nervous." In the light of some of the recent researches mentioned these can be shown by the methods described to have disturbances of the secretion of the thyroid. Indeed, he goes so far as to speak of "candidates for Graves' disease," tall, pale, slender, lively, irritable individuals as contrasted with the "myxedema candidates," the thick, florid, rather greasy, quiet, thoughtful, morose, slightly puffy individuals.

The importance of a correct diagnosis in thyroid disorders is too evident to need emphasis. A rather amusing case, in spite of its serious aspect, is that of a relative of the writer. She has for years been anemic, shown marked puffiness about the hands, face and ankles and been considered lazy by her more immediate relatives. When seen by the writer nearly ten years ago, under circumstances not permitting examination or urinalysis, the snap diagnosis of nephritis was made, and corresponding advice was given. Later urinalysis showed this to be entirely normal and subsequent events have shown that it is a typical case of myxedema, though mild in its manifestations. On communicating our new diagnosis we were thanked with the statement that she was glad to know that she had so interesting a disease but that she had been treated by us before!

Another which should have had a blood examination that would have led to a diagnosis, was that of a woman of 57 referred by Dr. A. A. Matthews. We were momentarily in that rut we all sometimes get into, of having a remarkable run of a certain type of case. Ours was a run of visceroptosis and we promptly put her in the same jar. Rest cure was made only more rigid when she continued to grow worse in bed. Someone else made the diagnosis.

A type of goitre often seriously misinterpreted, especially therapeutically, is that in which the size of the gland is considerable, often with serious pressure on the trachea. For some unknown reason these cases eventuate in serious cardiac disturbances, especially right ventricle insufficiencies. It would seem that any obstruction to free interchanges of gases in the lungs, whether it be obstructive in the direct sense or the indirect, i. e., some disturbance in the thorax, as pleuritic thickenings, kypho-scoliosis, etc., leads to greatly increased work for the right half of the heart. A remarkably large proportion of these cases are represented by large cystic goitres which have seriously compressed the trachea, as the dyspnea dependent upon the mechanical difficulties of getting air in and out of the lung increases, the right half of the heart hypertrophies to its maximum capabilities, finally to succumb under the general laws of failing compensation. We have had the opportunity of seeing no less than ten or twelve autopsies on such cases, in which the only cause of death was cardiac failure, and in turn a large goitre the only cause of the cardiac failure.

Such cases seldom get proper attention to the cardiac needs from a therapeutic standpoint. Most of the dyspnea is not obstructive, though this factor is considerable, but the result of cardiac incompensation. Operative indications seem so clear that the surgeon operates without reckoning with his subject's cardiac condition, indeed, without knowing that this organ is the cause of most of the dyspnea and cyanosis, A death on the operating table is too often the outcome of such misunderstood cases. Fortunately they are much rarer in this country than abroad—we have had the opportunity of seeing but one of this type since we understand their pathologic physiology. Prof. Kraus, of Berlin, has given the cardiac condition the name of "Kropfherz," and warns repeatedly against mistaking such cases for Graves' disease. The simulation is sometimes remarkable, when the tachycardia of failing compensation and the staring eyes of dyspnea are mistaken for corresponding signs of Graves' disease.

The actual need of preparing cases for operation is seldom present but, when it is, is often of vital importance to the successful outcome of the case. The dictum enunciated by Chas. Mayo before this association last year, that no case should be operated on except during a period of marked improvement, is doubtless acceptable without discussion, for Mayo's statement, that those who are operated on during a downward course are the ones that end fatally, was manifestly uttered by one who had had bitter experiences on that point. If this be the keynote in the preparation of thyrotoxic cases, there is but little more to be added. Rest in bed is usually all that is necessary. The value of the use of bromids or alkaloidal sedatives are seriously questionable. An organism already laden with toxins, most of which are highly stimulating, cannot bear many more, even though they be depressants.

Tachycardia usually needs no especial attention. In our experience the use of digitalis has shown no ability to reduce the pulse where rest would not. An ice bag over the heart has been of considerably more value than any drug. Insomnia should be met in a manner that seems best suited for the case under consideration; psychotherapy will often answer. A warm sponge bath late at night will often encourage a restful sleep, an item of considerable importance in favoring a successful outcome. One can scarcely conceive of a case that requires stronger measures that can still be considered in a favorable state for operation. Hypnotics are, therefore, not worth mentioning. Crile's ideas may be carried out by those who are believers in the kinetic theory of the disease.

One item of considerable importance seems too often neglected and when attended to is frequently applied in the wrong direction, viz., diet. Thyrotoxic individuals have an acceleration of all metabolic processes and under the circumstances need greater quantities of food. Except in the period immediately preceding operation, a high caloric value should be attained, giving largely concentrated foods and those taxing the digestive organs least. Nor should proteids be withheld, for the body proteids are not spared; indeed it would seem that they are the first to be attacked in the emaciation so characteristic of this disease. The question whether an operation shall be performed in one or two sittings is, perhaps, more essentially the function of the surgeon but, as this functionary is often too sanguine, it is well to caution against enucleations in cases that have had a long uphill pull in preparing for operation. Simple or preliminary ligation should be advised.

The care of those cases that refuse operation or in whom operation is out of the question is but a prolongation of that outlined above. In them the question of diet assumes considerably more importance, as it is difficult to feed these cases sufficiently on concentrated foods without causing considerable loss of appetite, if not a positive loathing for food. One such case of extreme emaciation was seen by the writer two years ago, in whom the results would seem to indicate that she was tided over by the use of glucose dissolved in normal saline solution given by the Murphy drip.

In some cases climatic treatment should be entertained. It would seem that they do best at considerable elevations in heavily wooded districts, probably the diversified scenery incident thereto being an important factor. True isolation is very unwise, since the fears of these patients tend to become aggravated by such measures. A sensible nurse and members of the family who can exercise proper control of themselves should be provided as companions.

For simple goitres there is no medical treatment, except when the cardiac changes have occurred (Kropfherz) and then are based upon the general principles of cardiac therapy. Medicinal treatment in Graves' disease we regard with a great deal of skepticism. We have seen little or no benefit from the Forchheimer treatment that would not have accrued from simple rest in bed. Our experience with it as a means of arriving at a cure is very small because of our outspoken leanings to surgery as giving the best hope of success.

A few words may be said in condemnation of the use of iodin for purposes of treatment. In simple goitres it may have one of two actions. It may activate a secretion previously nontoxic and produce typical Graves' symptoms, if its administration be prolonged, or it may lead to a thickening of the secretion and convert a simple into a colloid goitre, from which the secretion cannot be absorbed and symptoms of hyperthyroidism supervene. Wolfsohn has attempted to explain some of the toxic manifestations it produces so often, especially where goitres are endemic, on the basis of anaphylaxis.

Just a few words regarding the care of cases not wholly successful surgically. We believe this comprises every thyrotoxic case operated on. It is inconceivable that so crude a method as that which obtains, viz., taking one-half more or less of the gland, can possibly strike the optimum requirement for excision in a given case. If this be true all will need advice from the internist after operation. In not a few this is going to include the giving of various thyroid preparations, for the number of mild cases of hypothyroidism following operation is much larger than is generally assumed and admitted by surgeons, as is vouched for by a growing literature. The inadequate removals doubtless predominate. In these the question of further operation is usually up to the internist for final decision. Unless the improvement has been very slight it is usually wisest to make the best of the situation and keep symptoms in abeyance by controlling the patient and directing his endeavors into channels least harmful to him.

In the management of goitres with myxedema there is but one word, thyroiodin, usually in the form of dessicated gland substance. A caution may be added. As in digitalis, "the dose is enough," but too often patients are given this preparation in altogether too large doses. Myxedema being a non-fatal disease, there is no occasion for the hurry and enormous doses sometimes given.

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EDITORIAL

ALCOHOL PROHIBITED IN OREGON AND WASHINGTON.

The prohibition of the manufacture and sale of liquors in Oregon and Washington which was carried at the election last month was attained with a sufficiently large majority from each state to convince any observer that the citizens of each commonwealth were emphatic in their purpose of sounding the death knell of the traffic in alcohol. In realty this is not at all a local situation, being only a part of the national and world-wide awakening to the disastrous results of the sale and consumption of liquor. While the warfare on this traffic was at one time confined to enthusiasts and people who were ridiculed as fanatics, at the present time its opponents include not only individual moralists and educators but also the leaders of thought in all of our states as well as the directors of the largest European governments. Although the economic and financial aspects of the question have been much to the front during the campaign of the past few months, these views of the subject do not hold so acute an interest for our profession as medical considerations. Knowing, as do all physicians, the immediate and ultimate baneful results of the consumption of alcohol on the individual and the deteriorating effects both on existing and future generations, they cannot but view with satisfaction and pleasure any efforts that will result in the decrease of the consumption of alcohol. Whether or not prohibition effectively prohibits or whether blind pigs and boot-leggers maintain themselves in a given community in large or small numbers does not directly concern the medical profession. As it is their business and purpose to suppress and eliminate disease, the decrease in the devotees to the liquor habit will be received as an effective and much desired result in this direction. Even though the individual may be furnished with the means of obtaining liquor under certain conditions, we well know that absence of temptation on every hand as presented by the open saloon will effectually act as a most efficient deterrent to the existing widespread liquor habits. Even the most pronounced pessimist, if he will consider the matter calmly and judiciously, cannot fail to admit that subsequent generations will arise with cleaner habits, healthier constitutions and, therefore, with decreased tendencies to disease by reason of not becoming inured to the universal imbibing of intoxicants. Viewed with a broad vision for the future and from the standpoint of the g[illegible] good for the greatest number, there are few in our profession who will fail to greet prohibition with gratification and satisfaction.

THE DOCTORS AND FIRST AID IN WASHINGTON.

The question of first aid under the Industrial Insurance Act of Washington remains a subject of controversy between the employers and employees, as it has been since industrial insurance was first established, each party to the controversy claiming to desire some form of first aid but insisting that the other shall bear the expense of it. The first aid initiative measure which was rejected at the polls last month was openly a measure in favor of the employees. Believing that it was unjust to the employers, the medical profession opposed it and aided in its defeat. They did this the more willingly because, at the meeting of the State Medical Association in North Yakima, Governor Lister made an address in which he advocated its defeat, giving his hearers to understand that, if this result were accomplished, he would appoint a commission to draft a just first aid measure with representatives from the employers, employees and the medical profession. Although the governor now insists that he neither promised nor intended to appoint any physician on such commission, this impression was gained by every physician who heard his address and this understanding was spread abroad among the profession who unitedly worked against this measure. Accordingly the physicians of the state were overcome with amazement last month when the personnel of the commission was announced with representatives only from the employers, employees and the Industrial Commission. Believing that they were in a hopeless minority to accomplish anything for their own benefit, the employees have refused to accept appointments on the commission.

Thus it is noted in this present discussion, as in all which have preceded it, that the physicians of the state as a body have been ignored and entirely left out of consideration. It seems just that the employer and employee should share the cost of first aid on some equitable basis. This, however, does not directly concern the medical profession so much as who should attend the injured workmen. Representatives of a group of contract surgeons have devised a plan, giving the employers the exclusive right to select the attending surgeons. It is easy to see that this would soon establish a close medical corporation composed of the contract surgeons themselves. Justice to the employees and the profession at large demands that the injured workmen have the right to select their own attending physicians, who should be legally qualified practitioners. At the same time a just fee bill should be established which will serve as a guide for service and thus avoid the continual bickering and strife in the absence of some such provision. Such a fee bill can justly be secured only after conference of all parties concerned, including a committee from the medical profession. To an ordinary observer it would seem that a satisfactory solution of these problems can be secured if the rights of all interests are considered in a just and equitable manner.

OUR RELATIONS TO OUR ADVERTISERS.

The financial success of a medical journal depends to a very large extent on the income from advertisements, only a portion of the revenue coming from subscriptions. Hence it is of vital importance that a good line of advertisers be secured for permanent patronage to ensure an established journal. If an editor has no scruples as to the character of the wares whose advertisements he accepts, it is an easy matter to make a journal a large revenue producer. This fact explains the existence of a large number of medical journals, dependent on the income easily obtained from advertising medical preparations with dishonest claims for effectiveness or whose composition is kept a secret in the bosoms of their producers. Since the awakening of the conscience of the medical profession as a whole relative to these matters a few years ago, in nearly every state the support of the organized profession is given to an association journal whose management aims to exclude untrustworthy and unethical advertisements from its pages. Since the average medical editor has neither the time nor the qualifications to sift out the dishonest and undesirable advertisements brought to his notice, these journals have unanimously agreed to accept the supervision of advertisements which is made by the Council on Pharmacy and Chemistry of the American Medical Association, and they agree to publish only such as pass this censorship. The justice and the desirability of this limitation of advertisements is evident to every right minded physician. Since the number of such advertisements is limited, compared with those of doubtful and uncertain character, special efforts are necessary to secure a sufficient number to meet the financial requirements of the individual journal. These can be obtained, however, when their producers are convinced that the medical profession in a given section is disposed to patronize the legitimate products presented to them.

The management of NORTHWEST MEDICINE believes that this journal furnishes an especially attractive medium for advertising honest and ethical products, representing as it does the organized medical profession of the four states of Oregon, Washington, Idaho and Utah. At the recent annual meetings of the associations of these four states, each was requested to endorse a resolution recommending to the physicians of its state the patronage of the wares advertised in NORTHWEST MEDICINE, quality and price being satisfactory. The purpose of this resolution was to indicate to legitimate and desirable advertisers that the profession of the Northwest approves and trusts the quality of drugs and preparations which they produce. We wish at this time to call the attention of all our readers to this effort on the part of the journal to unite them in the support of ethical and trustworthy products which are brought to their attention. We would especially emphasize the fact that the pages of this journal will at no time carry advertisements of preparations which are in any sense unreliable and which have not been passed upon as to their efficiency and worth. We believe, therefore, that they should receive the support and patronage of the profession of the Northwest and the fact of this patronage will be made use of as an endorsement to obtain advertisements of this character.

PROFESSIONAL CARDS.

We wish again to call attention to the new feature of professional advertising cards which it is proposed to carry in this journal, beginning with out January issue. On page 9, of the advertising section, is a further announcement in the matter, where will also be found an order-blank for such a card.

MEDICAL NOTES

OREGON.

The Health Department of Portland is having its annual difficulty with the city commission. Nearly $5,000 was cut from the budget as estimated by Dr. Marcellus. This includes a number of salary increases which were recommended by Mayor Albee, to be made in accordance with the city's efficiency code. The one increase was in the salary of Dr. Marcellus which will be $3,600.

School Sanitary Officer. A novel plan is being worked out by Dr. C. S. White and the school authorities of the state and Lane County. Each school will elect a sanitary health officer from among the students who will wear a badge and have authority to enforce certain rules and regulations, including lighting, ventilation, inspection of drinking fountains, toilets and wash basins, even going into such details as personal cleanliness.

Klamath County Medical Society. The physicians of the Klamath basin have organized the Klamath County Medical Society, the first to be formed in southern Oregon, east of the Cascades. One of its main objects is sanitary improvement and educational work in the matter of the causes of epidemics. The officers are Dr. L. L. Truax, President; Dr. J. L. Harris, Vice-President; Dr. F. N. White, Secretary-Treasurer.

New Hospital. Forest Grove has a new hospital, called the Forest Grove Hospital, which has been opened under the management of two experienced nurses, Misses Knapp and Hubbard.

The Mercy Hospital in Eugene has been enlarged by the addition of a two and one-half story annex which is to be used as a nurses' home.

License Revoked. The State Board of Medical Examiners has revoked the license of Dr. C. J. Dean, of Portland, for the offence of employing cappers or steerers.

Dr. W. L. Bishop, of McMinnville, fell off of an electric car and as a result was considerably bruised and shaken but fortunately his injuries were not serious.

Dr. Bartle, of North Bend, has been appointed a permanent district surgeon for the Southern Pacific.

Dr. and Mrs. A. P. McLaren have returned to Rainier from a visit of several months at their old home in Toronto, Canada.

Dr. C. W. Hamilton, of Portland, has located at Warrenton.

WASHINGTON.

Firland Hospital. Seattle's new sanatorium at Richmond Highlands has been opened and is now caring for the 45 patients who were formerly housed in cottages on the premises. About 50 more patients now at the county hospital will be transferred gradually and it is expected that within a few weeks the plant will be running to its full capacity of 200 patients. In addition to the tuberculosis hospital there is a building for the care of children in the pre-tuberculous stage, an isolation hospital to take the place of the old pest house which was recently burned and a home for delinquent women.

Rabies Still Exists. Rabies is still present in the state in spite of the opinions of those persons who claim that it cannot exist except in hot weather. Dr. R. C. Schaffer, of Tacoma, has left for Chicago to take the Pasteur treatment. Two children in Spokane have been bitten by a mad dog and are now under treatment and two rabid dogs have recently been killed in Everett.

Examining Board Overruled. Judge Albertson, of the Superior Court of King County, has overruled the State Board of Medical Examiners in their action in revoking the license of Dr. W. A. Monich, of Seattle. The judge ruled that sufficient evidence had not been introduced to warrant such action.

Will Join the German Army. Dr. I. S. Nelson, of Spokane, who has been employed in the Indian Department of the Government for the past few years, has accepted a call to join the American Red Cross Surgical Corps and has requested that he be assigned to the German forces.

Threatened with Revolver. Dr. J. B. Anderson, health officer of Spokane, was compelled to disarm a woman who threatened him with a revolver when he advised her that her daughter needed a bath. It seems that germs are not the only cause of death which the public health officer must combat.

New Member of Examining Board. H. R. Morse, of Wenatchee, has been appointed by Gov. Lister as one of the osteopathic members of the State Board of Medical Examiners, to succeed J. L. Walker, of Sunnyside, resigned.

A Medical Senator. Dr. J. A. Ghent, of Seattle, was last month elected to the State Senate. He has already served two terms in the House of Representatives.

Dr. William Scott, of Centralia, who started for Europe in July has returned, after getting only as far as New York. He was unable to take his proposed trip on account of the cancellation of sailings and spent his time in postgraduate work in that city.

Dr. E. P. Fick, of Seattle, has returned after five months of study in the hospitals of London and our Eastern cities. He intended pursuing work in the hospitals of Paris and Vienna, but was prevented by the war.

Dr. R. H. Hunter, of Hoquiam, has been appointed United States surgeon for the Grays Harbor district. He succeeds Dr. T. C. Frary, who is retiring on account of health.

Dr. Adelaide Woodard, of Seattle, has been appointed by the Presbyterian Board of Foreign Missions to take charge of hospital and medical work in Allahabad, India.

Dr. W. W. Elmer, who recently moved to Kent, expecting to retire from practice, has evidently found that the life close to nature is too oppressive and has resumed active practice.

Dr. W. L. Jackson, formerly of Ellensburg, has located in Burlington, the change being necessitated by his wife's health.

Dr. J. W. Edwards, of Port Townsend, has returned from four months of travel and postgraduate work in the east.

Dr. W. G. Parker, of Cashmere, has been appointed as one of the regular Great Northern physicians for that division.

Dr. Evan Hyslan has been appointed Deputy Coroner of Tacoma.

Dr. A. O. Loe, of Seattle, is spending several months in study in Eastern clinics.

Dr. F. F. Gray, of Yakima, has had the misfortune to break his arm.

Dr. J. M. Burnett, of Vancouver, has located at Nooksack.

Dr. J. C. Moore, of Seattle, has left for two months of study and research work in the east.

Dr. C. T. Dulin, formerly of the U. S. Army, has located in Yakima.

Dr. J. F. Harris, formerly of Warden, has located in Rockford.

Physicians Married. Dr. Logan G. Kimzey, of Pullman, and Miss Ellen J. Gaffney, of Kent, were married Oct. 27. Dr. J. P. Schutt, of Bremerton, was married Oct. 20, in Kansas City to Miss Winona Miller, who last year was a domestic science teacher in the Bremerton schools.

OBITUARIES.

Dr. C. B. Stayt died at Kettle Falls, Wash., Nov. 15, at eighty years of age, after an illness of a few hours. In his youth he studied at Oberlin College, and graduated from Hillsdale College, Michigan. For a time he was superintendent of schools in Union County, Iowa. He served during the whole Civil War in the Michigan Volunteers. He was a graduate of the Hahnemann Medical College, of Chicago, Ill. He served as professor of physiology in Dunham Medical College, of that city. He lived in Kettle Falls for about nine years, previously having practised medicine in Chicago.

Dr. Alex McCully died at Nooksack, Wash., Oct. 20, from a sudden attack of disease of the heart. He was born in St. Louis, Mo., thirty-seven years ago and graduated in one of the medical colleges of that city. He practised in St. Louis until about a year ago, when he settled in Nooksack. He had established a flourishing practice in his home city and Sumas.

CORRESPONDENCE.

RADIO-ACTIVITY OF HOT SPRINGS.

To the Editor:

The accompanying interesting article on an interesting subject, from The Illustrated London Times, is of sufficient value to be well worth reading by the inquiring physician. If the heat of a hot spring and its radio-activity both come from radium contact, the heat and the cure should be in proportion, which is described and illustrated in this article. It should be of interest to the medical profession that the Northwest has at Hot Lake, Ore., the hottest of the curative springs of the world, its temperature being 196° F. The hottest European competitor is the Sprudel Springs, at Carlsbad, Germany, whose temperature is 164° F. G. W. Tape, M. D.

Hot Lake, Ore., Nov. 25, 1914.

HEALING WATERS.*

For nearly two thousand years people have resorted to certain natural springs for relief from diseases, among which we need only mention gout and skin affections. Without going into the Biblical instances of Jordan and the pool of Bethesada, the baths of Helouan in Egypt were celebrated long before the Emperor Hadrian took his gout thither. The thermae of the Romans started the popularity of half the water-cures in Europe. For many centuries men were accustomed to benefit by these natural remedies without troubling themselves as to how the healing process was effected, but with the coming of the scientific age they became more curious and the result of their inquiries has led to many changes of opinion among the learned.

The first science whose aid was invoked to solve the problem was naturally chemistry. If the waters of a particular spring were found to exercise a medicinal effect on the person drinking them, it was argued that it must be because they contained certain drugs in solution which could be discovered by analysis. When put to the test the drugs in question were detected easily enough, although they hardly seemed equal to the task assigned to them. Mineral salts, such as the sulphates of the alkalies and the alkaline earths, free sulphur, salts of iron and arsenic, and more rarely a trace of phosphorus, about made up the tale. These drugs, when freely "exhibited," to use the old medical phrase, in a concentrated state entirely failed to produce the same effect as the natural springs, and medical men were, therefore, driven to attribute the curative powers of these last to their excessive dilution. The drug, it was argued, which, taken in quintessence, produced either a harmful effect or none at all, because beneficiently operative when diffused throughout an astonishing quantity of water and imbibed very slowly. The argument must have been pleasing to the homeopathists but was upset by another observed fact. When the waters of a medicinal spring were bottled and taken by the patient in his own home, they did not produce the same effect as when drunk at the source itself and this became more evident the longer they were kept. As has been lately said, it was as if they had a life of their own which gradually died out when they were imprisoned in habitations made by man.

Driven away from this explanation, our medical advisers had recourse to others. The rising science of hygiene was brought into court and at first seemed quite equal to the occasion. The regular life, simple fare and unaccustomed exercise which people, hitherto inured to the insanitary conditions of town life, were compelled to follow when they found themselves at a "cure," were responsible for most of its beneficial effects. This theory was pushed to its fullest extent by certain German doctors who, in the sergeant-major spirit of their race, insisted upon so dragooning their patients that every hour of their lives when on cure was as strictly marked out as in a regiment in barracks. The general advance of luxury, however, has almost put an end to this and visitors to a cure now manage to eat nearly as many heavy meals, to keep as untimely hours, and to flirt as much as anywhere else without paying much attention to the denunciations of the "Herr Doktor." Perhaps the fact that even when not on cure they enjoy fresh air and exercise to an extent undreamed of by their forefathers accounts for the fact that they are not, as a rule, a penny the worse.

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*From the Illustrated London News, Mar. 7, 1914.

Lately, however, another and a younger science has stepped in to help out the failure of its elders. Most curative waters—notably those of our own Bath and the French Plombieres—are more or less radio-active, and give off appreciable quantities of the so-called inert gases of which helium may be taken as the type. This explains, as M. Charles Moureu, a member of the Institute and Professor at the High School of Pharmacy in Paris, lately pointed out in an address to a Congress at Madrid, every one of the facts above mentioned; for the emission of helium, so to speak, of the radio-active elements, and the "decay" of these last is, in most cases, comparatively rapid. Now radium and its congeners have, for good or ill, a most marked effect on the human organism and, if we suppose that the waters in question are charged with the emanations proceeding from them, we can readily understand their medicinal effect.

Moreover, to quote again from M. Moureu, not only will the atmosphere in the neighborhood of a radio-active source be rich in helium and other gases of the kind, but a patient put to soak in a bath of the water drawn from it will be taking them in the most natural and convenient way. Thus is explained why the peculiar properties found in water fresh from a spring vanish in time from the same water when bottled, and why a visit of some length to the source results in cures not effected by any other means. Why the radio-active substances should have such effects on the organism, must be discussed another time.—F. L.

REPORTS OF SOCIETY MEETINGS

OREGON.

PORTLAND CITY AND COUNTY MEDICAL SOCIETY.

Pres., A. W. Moore, M.D.; Sec., G. S. Whiteside, M.D.

Portland City and County Medical Society met in the Medical Building, Portland, Ore., Oct. 21, 1914, 8:30 P. M., with President A. W. Moore in the chair.

Members present: Manion, A. C. Smith, Baar, Kistner, Johnson, Flaggs, Baird, Sabin, McClure, Bettman, Fenton, Myers, Pain, Coe, Rand, Marcellus, Tilzer, Parker, Barbee, Townley, O'Day, P. Jones, J. Rosenfeld, Selling, Sommer, C. C. Moore, Booth, Calbreath, Webster, Slocum, A. E. Rockey, Pettit, Holden, Rybke, Williamson, Watts, Bilderback, Ricen, House, Gillert, Sternberg, Wolf and Whiteside. Elected to membership, H. Schwartz.

PAPERS.

Biblical and Talmudic Views as Compared with the Standpoint of the Modern Surgeon. By Dr. Tilzer.

Dr. Williamson says Jewish theology, hygiene and law stand out as emanating from the most enlightened minds of history and bear a very close resemblance, as Dr. Tilzer says, to the most modern philosophy, hygiene and law.

Dr. A. C. Smith was very much interested, and is surprised that so much we thought new is proved to be old.

Dr. Whiteside spoke on the sepsis of 100 years ago; Dr. Baar on the asepsis followed under the law of Moses in regard to circumcision.

Dr. Ricen says Moses obtained his views of hygiene from the Egyptians. In the sixty century, B. C., in Babylon, similar hygiene to that of Moses was practised. Their knowledge was entirely empirical. With regard to pork Moses forbade it because of the prevalence of trichinosis.

Dr. Selling mentioned the three cardinal Jewish law principles that food is more important than medicine. Most diseases are cured by nature, prophylaxis being most important of all.

Dr. Pettit mentioned the writings of O. W. Holmes on the carrying of contagion in 1842. Dr. A. W. Moore spoke of the perishable nature of printed books which can not last more than 200 years.

Two Years in the Sandwich Islands. By Dr. J. C. O'Day. Description—geographical, economic and medical. Tropical diseases—leprosy, dengue, beriberi, plague, cholera and dysentery. Tuberculosis is very prevalent especially among the natives. Medical societies are strong and active. Two excellent hospitals in Honolulu. The Asiatic population, regulations governing the practice of medicine.

The society met in the Medical Building, Nov. 4, President A. W. Moore in the chair.

Members present: Drs. Tilzer, Coe, Johnson, McCool, Pease, Kistner, Payne, Baird, Howard, Rybke, L. Manion, Else, Dillehunt, E. and P. Rockey, McClure, McGinn, Kiehle, White, Sabin, McMurdo, Chipman, Connell, Myers, House, Trimble, Williamson, Hamilton, Benson, O'Day, Flaggs, Wight, Gellert, McDaniels, BoDine, Matson, Booth, Parker, Wellington, Stromm, Pettit.

Fracture of the Neck of the Humerus. By Dr. J. A. Pettit. Extension should be more often used in long bone fractures, 8 to 9 lbs. at first in extension and in fractures of humerus not less than 5. Will largely replace operative methods except when irreduceable. Showed lantern slides for diagnosis and treatment.

Dr. P. Rockey thought this not so successful as appears from the paper. Displacement is not likely to occur after reduction in oblique fractures. Use of tin splints gives more or less extension, especially when used in ambulatory cases.

Dr. McClure says correct apposition not always necessary for good functional use. Unless carefully kept in apparatus likely to get excessive callus. Wooden splints not so valuable as do not fit limb. Best to use plaster. Extension by Bordenheim's method.

Dr. O'Day said at first injury causes muscular spasm depending on the condition. Later relaxation.

Dr. Sabin says spasms due to pull of biceps. The direct pull downward of the weight is not always exactly counteracted by muscular pull.

Dr. Pease has not had much success with a weight at point of elbow.

Dr. Flagg, of Vancouver, says at the Barracks they use plaster only and not extension.

Dr. Baird thinks to get a proper X-ray of these fractures requires much mechanical ingenuity. Upper fragment is often thrown by muscular pull into abduction and is shown in that position by X-ray.

Dr. Hamilton mentioned value of extension; comparison made with use in femur fractures.

Dr. Dillehunt said traction is neglected in many fractures where it would be of value. Paralysis due to long splints pressing into muscles of forearm at bend of elbow. Too much weight causes too loose capsule and tends to flail joints.

UMATILLA COUNTY MEDICAL SOCIETY.

Pres., ————; Sec., G. L. Boyden, M. D.

At the meeting of the Umatilla County Medical Society, held at Pendleton, Ore., Oct. 27, the following resolution was passed:

Whereas, An invitation has been extended to the physicians of Pendleton to act as examiners at the better baby show to be held in Hermiston, Nov. 14 and 15; and

Whereas, Osteopaths have likewise been asked to act as associates in such medical examinations; and

Whereas, The aforesaid physicians believe that it would be impossible for them to judge and act in harmony with said osteopaths, owing to the absolutely diverse teachings and opinions on matters that would have to be discussed at said contest, it has been

Resolved, by the physicians comprising the City and County Medical Society of Umatilla County, in session on the 27th day of October, 1914, That we, the physicians, be excused from acting as medical examiners at said contest.

KING COUNTY MEDICAL SOCIETY.

Pres., D. H. Palmer, M. D.; Sec., G. W. Swift, M. D.

The first regular semi-monthly meeting of the King County Medical Society was held in the assembly room of the Chamber of Commerce, Monday evening, Nov. 2, 1914, 57 members being present. Meeting was called to order by the president, Don H. Palmer. Minutes of the previous meeting were read and approved.

Clinical Cases.

Jejunal Ulcer. C. W. Sharples presented this case.

Dr. Lensman discussed it from the medical standpoint, as he had worked with Dr. Sharples on the case.

Papers.

Sepsis in Infants. By Fredrica Phillips.

Discussion by Fonda Nadeau and J. I. Durand.

Dr. Bueler, of Chicago, addressed the society.

Infections of the Hand. By J. Tate Mason.

Discussion by H. D. Dudley and Bruce Elmore.

R. C. Baumgarten and C. R. Castlen were elected to membership.

The second regular semi-monthly meeting of the society was held Nov. 16. Meeting was called to order by the president, Don H. Palmer, at 8 o'clock, 79 members being present. Minutes of the previous meeting were read and approved.

Clinical Cases.

Cerebral Embolism. By F. L. Horsfall.

Hydronephrosis. By G. S. Peterkin.

Discussion by J. B. Manning.

Papers.

Gall-stone Ileus. By E. O. Jones.

Discussion by A. P. Lensman, S. J. Stewart and H. D. Dudley.

Late Results of Congenital Dislocation of the Hip. By F. J. Fassett.

The applications of Drs. Renfro and O. J. West were read.

Dr. Davidson read a proposed ordinance in regard to the stalling of automobiles on the avenues of the city. He moved that the King County Medical Society voice its approval of the proposed amendment to permit the autos to stand after 7 P. M. Seconded and carried and referred to the committee on public health and legislation.

Dr. J. H. Lyons read a communication in the Welfare magazine in regard to the school clinic conducted by Dr. I. C. Brown, in which it was stated that the clinic was self-supporting. He wanted to know what the reason was for this.

H. J. Davidson explained briefly the plan of the clinic and suggested that Dr. Lyons should carry his investigation further.

F. L. Horsfall stated the city has a public clinic at the City Hospital; that the School Board has no business in establishing a school clinic; that Dr. Lyons is right in bringing this matter before the society.

Moved by Dr. Paschall that Dr. Brown come to the society and explain his system; by Dr. Davidson that he be requested to explain how this system is an improvement over others. Motion seconded and carried.

H. E. Allen explained how the Governor promised in North Yakima to appoint members of our profession on a first-aid commission. Today the papers state that no physicians are on the committee; that the Governor decided not to have any.

The matter was discussed by C. H. Thomson, F. L. Horsfall and D. H. Palmer.

H. J. Lyons moved that a committee be appointed, including Dr. Allen, to frame a resolution to the Governor stating our position, to explain to Dr. Ghent, of the State Senate, our position and demand representation on the committee. Dr. Allen wished to be left off the committee. Motion carried.

FACTS ABOUT CERTAIN REMEDIES.

Since publication of New and Nonofficial Remedies, 1914, and of the supplement to New and Nonofficial Remedies, 1914, (July 1, 1914), the following articles have been accepted for inclusion with "N. N. R.":

Abbott Alkaloidal Co.: Strepto-Bacterin (Human): packages of 6 ampoules each containing 100 million killed bacteria. Slee's Normal Horse Serum: vials containing 100 Cc.

H. M. Alexander and Co.: Typhoid Vaccine.

Antiseptic Supply Co.: Stypstick Applicators, Alum 75 per cent.

Arlington Chemical Co.: Arlco Urease.

The Bayer Company, Inc.: Cymarin, Tablets Cymarin, Ampoules Cymarin Solution.

Fougera and Co.: Electrargol for Injection, 10 Cc. Ampules.

Greeley Laboratories, Inc.: Acne Vaccine, Colon Vaccine, Pyocyaneus Vaccine, Gonococcus Vaccine, Pneumococcus Vaccine, Staphylococcus Albus Vaccine, Staphylococcus Aureus Vaccine, Streptococcus Vaccine, Typhoid Bacillus Vaccine.

Hynson, Westcott and Co.: Urease-Dunning.

Maltine Co.: Maltine Malt Soup Extract.

Memorial Institute: Diphtheria Antitoxin, 10,000 units.

H. K. Mulford Co.: Friable Tablets of Emetine Hydrochloride, Hypodermic Tablets of Emetine Hydrochloride, Antidysenteric Serum, Antipneumococcic Serum, Polyvalent, Antistrepotococcic Serum, Polyvalent, Antistreptococcic Serum, Scarlatinal, Polyvalent, Pyocyano Bacterin, Typho-Serobacterin Mulford, Immunizing.

Pasteur Institute of St. Louis: Antirabic Vaccine.

Schieffelin & Co.: Acne Vaccine, Antimeningococcus Serum, Colon Vaccine, Gonococcus Vaccine, Scarlet Fever Treatment, Typhoid Combined Vaccine (Prophylactic).

E. R. Squibb and Sons: Acne Vaccine, Bacillus Coli Communis Vaccine, Bacillus Pertussis Vaccine, Diphtheria Antitoxin, Gonococcus Vaccine, Meningococcus Vaccine, Curative, Meningococcus Vaccine, Immunizing, Pneumococcus Vaccine, Pyscyaneus Vaccine, Smallpox (Variocla) Vaccine (Glycerinated), Staphylo-Acne Vaccine, Staphylococcus Vaccine, Streptococcus Vaccine, Typhoid Vaccine, Curative, Typhoid Vaccine, Immunizing.

Standard Chemical Co.: Radium Bromide.

Waukesha Health Products Co.: Hepco Flour, Hepco Dodgers, Hepco Grits.

PROPAGANDA FOR REFORM.

Serobacterins. While objection may be made to the sensitized living bacteria used by Besredka because there is always an uncertainty as to the action of living bacteria in the animal body, such danger cannot be attributed to the "serobacterins" because they contain dead bacteria, and so far as known, can do no more harm than other dead bacteria—in fact it is claimed that they are preferable to other vaccines because the toxic products of the bacteria, other than the immunizing properties, have been largely removed. It must be said, however, that these preparations are still in the experimental stage. In great part, careful clinical observations will decide that the serobacterins are really superior to ordinary vaccines (Jour. A. M. A., Oct. 3, 1914, p. 1223).

Lactic Acid Ferments. There is a large amount of literature to the effect that the **Bacillus bulgaricus** hinders putrefaction in the intestinal canal. While there may be some question as to a greater success in securing the implantation of this bacillus by administering it in "liquid cultures" the report of the Council on Pharmacy and Chemistry shows that such a culture is likely to reach the consumer in a more active state than one in the form of tablets (Jour. A. M. A., Oct. 3, 1914, p. 1223).

Agar-Agar-Biscuits. To make agar-agar biscuits it is only necessary to add finely powdered agar-agar to the flour used in making the biscuit. The amount should be, if possible, sufficient so that a dose of 5 Gm. will be contained in each biscuit (Jour. A. M. A., Oct. 3, 1914, p. 1224).

Action of Sodium Cacodylate. Containing its arsenic in organic combination and in the pentavalent state, which becomes therapeutically active only as it is reduced to the trivalent inorganic state, sodium cacodylate is so slightly toxic that therapeutic doses do not give rise to toxic symptoms. There is nothing in the literature to show that sodium cacodylate has a special action on the eye and blindness from its administration need not be feared (Jour. A. M. A., Oct. 3, 1914, p. 1223).

Glycothymoline Refused Recognition. A report of the Council on Pharmacy and Chemistry cites Glycothymoline as a typical illustration of a "patent medicine" advertised to the public through the doctor. Different formulas have been ascribed to Glycothymoline by its promoters from time to time—but whatever the exact composition of this secret nostrum may be, it has been definitely shown that it is but a weak antiseptic solution. Nevertheless, the advertising circulars recommend the use of Glycothymoline in such serious conditions as diphtheria and ophthalmia of the newborn. Glycothymoline is in conflict with Rules 1 and 4 of the Council on Pharmacy and Chemistry, because of its indefinite composition and the method of advertising it to the public. It is in conflict with Rules 10, 6 and 8, in that it is an unscientific, shot-gun mixture sold under unwarranted therapeutic claims and under a misleading name (Jour. A. M. A., Oct. 10, 1914, p. 1313).

Glycothymoline Not Harmless. Glycothymoline is a mild antiseptic practically devoid of germicidal power and when used as a simple mouth wash is practically harmless. However, the recommendations to the public for its use in serious diseases make it a menace to the public health—and physicians are responsible for its wide spread use (Jour. A. M. A., Oct. 10, 1914, p. 1304).

Declared Misbranded. The Federal authorities have secured convictions under the Food and Drug Act against the following "patent" medicines: Nurito, West Baden Sprudel Water, Radam's Microbe Killer, Dr. Hilton's Specific No. 3, Dr. Sullivan's Sure Solvent, Russell's White Drops. With the exception of the first two the products were declared misbranded chiely because false and fraudulent therapeutic claims were made for them.

Nurito was declared misbranded because false statements in regard to the ingredients were made and West Baden Sprudel Water because it was not a natural water as claimed (Jour. A. M. A., Oct. 17, 1914, pp. 1408 and 1409).

Phenolax Wafers. These are tablets said to contain phenolphthalein 1 gr., "aromatics" and sugar enough to make five grains. It is a question what purpose the "aromatics" and sugar serve, perhaps these are to mislead the unthinking to believe that this combination has some mysterious value over phenolphthalein itself (Jour. A. M. A., Oct. 17, 1914, p. 1410).

Papine (Battle and Co.) This is a simple aqueous alcoholic solution of morphin, 1 grain to each ounce. It is exploited under the utterly unwarranted claim that it does not nauseate, constipate nor create a habit (Jour. A. M. A., Oct. 17, 1914, p. 1411).

Celerina and Aletris Cordial (Rio Chemical Co.). Celerina is a shot-gun lixture said to contain, in addition to 42 per cent of alcohol, kola, viburnum, celery, cypripedium, xanthoxylum and aromatics. Aletris Cordial is said to contain 28 per cent alcohol (more than is found in wine) besides three obsolete and valueless drugs, aletris, helonias and scrophularia. Whatever virtue there is in Celerina and Aletris Cordial is derived from the alcohol (Jour. A. M. A., Oct. 17, 1914, p. 1411).

Use of Paraffin Oil. While it is recognized that cancer may be caused by chronic irritation, the paraffin oil used medicinally is bland and nonirritating and there is no reason to suppose that its continued use would cause cancer. A good quality of oil may be obtained by prescribing **Paraffinum Liquidum** or **Petrolatum Liquidum Grave** (Jour. A. M. A., Oct. 17, 1914, p. 1411).

Hemo. The Thompson Malted Food Company, Waukesha, Wis., which sells Hemo, Malted Milk and Malted Beef Peptone, offers its stock to physicians with promises of large profits. Hemo is advertised as "the food that builds up weak stomachs" and is stated to contain "the iron of spinach, the juices of prime beef, the tonic properties of selected malt in powdered form and the richest sweet milk." Hemo is "promoted" by absurdly extravagant claims and pseudo-scientific nonsense. Disregarding the question whether or not this is a stock jobbing scheme or whether the purchase of the stock is a good investment, physicians who buy the stock and prescribe the firm's output are not giving their patients a square deal (Jour. A. M. A., Oct. 24, 1914, p. 1494).

Ginseng. Despite the fact that the peculiar man-shaped root of ginseng has no medicinal value so far as science can determine, the Koreans for decades paid their tribute to China in ginseng. In China it is reported as a cure for all ills that human flesh is heir to and has a special reputation as an aphrodisiac.—(Jour. A. M. A., Oct. 24, 1914. p. 1486.)

BOOK REVIEWS

Edited by Kenelm Winslow, M. D.

Dietetics: or Food in Health and Disease. By William Tibbles, LL.D., M. D., L. R. C. P., M. R. C. S., L. S. A. Medical Officer of Health, Fellow of the Royal Institute of Public Health, etc. Octavo, 627 pages. Cloth, $4.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This is a splendid work because of its unusual blending of the truly scientific and practical. The book is of moderate size, yet the print is rather fine and it therefore contains an enormous amount of material. The first 268 pages are concerned with food tables, digestion, metabolism, food requirements under many circumstances, food in old age, infant feeding and special diets. The remainder of the book is devoted to feeding in special diseases and it concludes with a consideration of recent research work in dietetics. This refers chiefly to the vitamines, lipoids and amino-acids. It is well known that there are certain substances which are vital in food and yet are more saliently appreciated when absent—these are the vitamines. Thus beri-beri and scurvy, or scurvy-rickets in the young, are due to the absence of vitamines. In beri-beri, where the disease may be caused or cured at will by first feeding rice without its bran and then the rice-bran with its vitamine, we have a most convincing example. Phosphorus has been considered the essential body lacking in beri-beri but recent researches throw some doubt on this point. In milk there are apparently various vitamines and some are destroyed by heat, as in boiling and condensing. Thus, while there is a vitamine in uncooked milk which will cure scurvy, there is another in cooked milk which will cure beri-beri, although the scurvy vitamine is destroyed in the latter. The discussion of dietetic treatment in the specific diseases is admirable in its wealth of scientific knowledge and in the clear, sensible, practical application of the same.

Winslow.

The Practice of Surgery. By James G. Mumford, M. D., Lecturer on Surgery in Harvard University. Second edition, thoroughly revised. Octavo volume of 1,032 pages with 683 illustrations. Philadelphia and London. W. B. Saunders Company. 1914. Cloth, $7.00; half Morocco, $8.50.

This work is written especially for the student and yet it differs from the general run of surgical text-books in that it is founded almost solely on the author's personal experience. All that mass of compiled information (and misinformation) which is usually handed down religiously from one generation of surgical writers to the next is here entirely omitted. In its plan also the work will be found to be rather unconventional. Surgical diseases are taken up in the order of their interest, importance and frequency. Thus, we find that Chap. I is devoted to a discussion of appendicitis which is sound and thoroughly practical, though the author will find few to agree with him in his recommendation of abdominal irrigation in diffuse peritonitis. For a work on general surgery there is an unusual amount of space devoted to gynecologic affections and operations, a decided advantage. The text is clear and forceful, the printing is good and the illustrations numerous and well selected. An admirable text-book. **Jones.**

Worry and Nervousness, or The Science of Self-Mastery. By William S. Sadler, M. D., Professor Therapeutics, Post-Graduate School of Chicago, etc. Cloth, 535 pages. Illustrated. $1.50. A. C. McClurg & Co., Chicago. 1914.

This is a popular medical book written in a picturesque and rather exuberant style and containing allegorical illustrations, as, for instance, at the end of the chapter on "Americanitis or high pressure living." Here we find portrayed in photographic half-tones an automobile broken down in the country, with one of its occupants hidden from view underneath, searching into the hidden depths of its disturbed anatomy, while another occupant is diligently making researches into the pathology of the mechanism under the hood. This is labelled "Engine trouble, the result of high speeding." Below is a picture showing a nurse solicitously manipulating a cold compress on the head of the unfortunate patient in bed, while a doctor sits, with formidable, judicial brow and heavy-fobbed watch, taking the pulse. At his back an elderly, gray, bewhiskered physician is peering anxiously through a microscope, while through the door bursts a buxom female, followed by a youthful replica with hands up-raised in alarm at seeing father in such straits. This edifying picture is labelled "Engine trouble, the result of high living." The book describes neurasthenia and various neuroses in the first 254 pages and the treatment of such in the last 250 pages. It is printed in very fine type and contains an immense number of words, many of which might well have been spared. The work is authoritative but prolix and its style does not appeal to the reviewer. It is well to warn the public against faulty living likely to result in neuroses, but the neurotic is the last patient to cure himself out of a book. **Winslow.**

An Epitome of Pediatrics. By Henry Enos Tuley, A. B., M. D., late Professor of Obstetrics, Medical Department, University of Louisville, etc. New (2d) edition, revised and enlarged. 12mo., 324 pages. Cloth, $1.00, net. Lea & Febiger, Publishers, Philadelphia and New York. 1914.

This book now in its second revised edition contains brief outlines of the essentials on anatomy, care, feeding of the infant and nutritional disorders, together with the many common diseases in infancy and childhood. The etiology, symptomatology and treatment of these conditions are likewise briefly considered. As a manual for students and practitioners, for which the book is intended, it should prove of value but, of course, cannot replace the best of our large text-books on this subject. **Manning.**

The Tonsils, Faucial, Lingual and Pharyngeal. By Harry A. Barnes, M. D., Instructor in Laryngology, Harvard Medical School. 168 pages and 38 full-page illustrations. Octavo. Cloth, $3.00. C. V. Mosby Company, St. Louis.

This timely little volume is full of truth about tonsils and adenoids. It contains much that is new in histology and embryology of the lymphoid structures of the throat and altogether forms a satisfactory basis for theories of pathology and clinical practice. Nor is the practical side slighted, for the author describes very clearly the most approved operative technic, together with emergency measures. The author's choice of operations is the combined dissection with snare, but he acknowledges the value of the Sluder operation in expert hands. The chapter on the relation of tonsils to systemic infections is a very concise but complete summary of the question. "After other sources of infection have been eliminated as far as possible, the removal of the tonsils may be advised as a therapeutic measure even when clinical examination fails to show any pathological condition in them. The results of tonsillectomy justify this." **Seelye.**

Radium and Radiotherapy. Radium, Thorium and Other Radio-Active Elements in Medicine and Surgery. By William S. Newcomet, M. D., Professor of Roentgenology and Radiology, Temple University, Medical Department, Philadelphia, etc. 12mo., 315 pages, with 71 illustrations and 1 plate. Cloth, $2.25, net. Lea & Febiger, Publishers, Philadelphia and New York. 1914.

In excusing himself for this production the author particularly mentions his desire to inform the novice on the salient points of radium and radio-therapy, so that common errors of the past may be avoided. That there is a field for this little volume is readily conceded and the easy, unaffected style of the author in launching himself upon this rather difficult task is at once noticed in the opening chapter. His plan of taking up the study of these comparatively new and intensely interesting substances, on the same basis as any drug, is methodical and commendable. A brief history of the early discoveries of radioactivity, the chemistry and physics of the radioactive elements, and then the physiology and therapeutics, with illustrative cases, all in a statement-of-fact manner, without burdensome speculations and theories, comprise the work. It is well worth while. **Snively.**

Gunshot Injuries, How They Are Inflicted, Their Complications, and Treatment. By Colonel Louis A. Lagarde, U. S. Army Medical Corps (Retired) Late Commandant and Professor of Military Surgery, U. S. Army Medical School, etc. 398 pp. Price, $4, net. Wm. Wood & Co., New York.

After a careful definition of a gunshot wound and description of firearms, explosives, projectiles and ballistics, the author takes up the characteristic lesions caused by projectiles, describing the various symptoms of gunshot wounds. The thirteenth chapter covers the medico-legal phases of gunshot wounds very completely. His conclusions corroborate those generally promulgated, following the experiences of military surgeons in the Spanish-American and Russio-Japanese wars, that the results of exploratory abdominal work in the field are unsatisfactory and that better results are obtained by a certain degree of expectant treatment. In summing up, Col. Lagarde lays down the following measures calculated to prevent infection in the early treatment of gunshot wounds, which apply, of course, equally well to the gunshot wounds in civil practice: "The first dressing should be sterile, applied over a surface that has been painted with iodin. No attempt should be made to disinfect the wound proper on the battlefield. Probing for bullets or the use of even a sterile finger in a wound is absolutely prohibited. The severely wounded, and gunshot fractures should not be transported unnecessarily. Immobilization when indicated should be practised at once and in bone lesion with or without fracture it should be maintained until firm boney union has occurred. No attempt should be made to invade the bullet's track for the purpose of sterilizing the wound." In view of conditions attending the great European war, in which all recent teachings of the effects of the small caliber, high powered rifle and the fighting at long range are so completely overturned by the attacking in mass formation, hand-to-hand fighting, and the large proportion of wounds inflicted by shrapnel and shell fragments, all statistics and deductions of the military surgeons in recent wars are likely to be revolutionized. Until the records and the teachings of the military surgeons engaged in the present great conflict can be formulated and systematized, this work of Col. Lagarde's is the best guide to the surgeon in military or civil life, in the treatment of the wounds inflicted by modern firearms. Dawson.

Progressive Medicine. Vol. XVI., No. 3. $6 per annum. Sept., 1914. Lea & Febiger, Philadelphia and New York.

This number contains sections on diseases of the thorax and its viscera, by Ewart; dermatology and syphilis, by Gottheil; obstetrics, by Davis; and diseases of the nervous system, by Spiller. The earlier use of pneumothorax in phthisis is urged and the guide to its use is the progress of medical treatment as shown by repeated x-ray plates at 3 months intervals, according to Davis. One of the most recent methods of treatment of hemoptysis is by emetin and this, with pituitrin and serum, seem to be most fashionable at the present. In asthma the injection of 1-1000 adrenalin solution appears to be the latest thing in drugs, the dose being but one-half to one minim. How it relieves bronchotetany is left to the imagination. In dermatology the last word is the treatment of various skin lesions with the patient's own serum and a great variety of the more persistent dermatoses have apparently been greatly improved by this method. The rationale is as yet unknown and the treatment is empirical. The latest test for syphilis is luetin, a skin reaction analagous with the von Pirquet tuberculin test and dependent on allergy or anaphylaxis. It appears to be more delicate than the Wassermann reaction. This number is brimming over with medical matters of great interest as usual. Winslow.

Local and Regional Anesthesia, Including Analgesia. By Carroll W. Allen, M. D., of Tulane University, New Orleans, with an introduction by Rudolph Matas, M. D., of Tulane University, New Orleans. Octavo of 625 pages with 255 illustrations. Philadelphia and London. W. B. Saunders Company. 1914. Cloth, $6.00, net; half Morocco, $7.50, net.

The appearance of a work such as this is an indication of the growing importance of local anesthesia in the minds of American surgeons. It is only proper that the first complete American work on this subject should come from the clinic of Rudolph Matas who may justly be credited with being the pioneer of local anesthesia in this country. The first few chapters are devoted to a general discussion of the principles of anesthesia, the physiology of pain and the method of action of the various anesthetic agents. Then comes a chapter on the principles of technic. The greater portion of the book is devoted to a detailed discussion of the technic for special operations in all portions of the body. Spinal anesthesia, epidural injections, paravertebral and parasacral anesthesia also come in for a thorough discussion. Throughout are to be seen evidences of the profound study and immense experience of the author. The book should be read by every surgeon. Jones.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Vol. III., No. 4. Octavo of 190 pages, 61 illustrations.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago, Vol. III., No. 5, Octavo of 254 pages, 65 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published bimonthly. Price, per year, paper, $8.00; cloth, $12.00.

In the August number (No. 4) of The Clinics there is a fine exposition of nearly 50 pages on the diagnosis of the varieties of ileus by Dr. Murphy. Cases, illustrating the numerous kinds of ileus depending on the etiology, are taken from the speaker's enormous experience and enliven and emphasize his points in a most forcible manner. Thus he speaks of a case of ileus depending on strangulation of the gut in an inguinal pocket operated upon in a house with a man holding a lamp for light. During the operation the man fainted and fell on the floor with the lamp while the operator had an ex-street-car conductor giving ether and a clergyman, as assistant, "who came to attend a demise, but stayed to officiate in a revival." Cases of streptococcus peritonitis following tonsillitis are recorded. In the October number (No. 5) there are also nearly 60 pages given to diagnosis, in addition to all the descriptions of surgical cases.

So this periodical has a wonderful interest to the general practitioner as well as the surgeon. It is a sort of postgraduate course by correspondence school with Dr. Murphy's tremendous experience and inimitable facility in expression as the chief feature. WINSLOW.

A Text-Book of Pathology, With an Introductory Section on Post-Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M. D., and T. Mitchell Prudden, M. D. Revised with the co-operation of Francis Carter Wood, M. D. Tenth edition. Completely revised. 8vo., 1,144 pages, illustrated by 14 full-page plates in black and colors, and by 694 line and half-tone cuts in black and numerous colors. Wm. Wood & Co., New York. Extra muslin, $6.00, net; leather, $7.00, net.

This work has been a standard text-book in medical schools for so many years that it is like a household word with members of the medical profession. This, the tenth edition, has kept abreast of the times and has incorporated into its text some account of the more important advances in the knowledge of pathology which has been made during the past three years. The illustrations have been increased and the references freshened. While portions of the text seem somewhat hackneyed, the work remains one of the very best on this subject. WEST.

Eye, Ear, Nose and Throat. Practical Medical Series. Vol. III, Series 1914. By C. A. Wood, M. D., A. H. Andrews, M. D., M. L. Ballenger, M. D. Price $1.50; 366 pages. Year Book Publishers, Chicago.

This volume presents in a very readable form a synopsis of the late literature. While it is of little practical use to the general practitioner, it is a boon to the busy specialists, few of whom can have access to all the literature which it covers. Its real value lies in the fact that the literature has been culled and digested by men whose names alone would stamp it as a work of merit. The resume of the recent work in glaucoma and the comparative anatomy of the eye are of particular interest. The review of the work of Hiss and his leukocyte extract, and the works of Stendell on the hypophysis cerebri is alone worth the price of the volume. This is a splendid addition to one's library.

BURWELL.

Serology of Nervous and Mental Diseases. By D. M. Kaplan, M. D., Director of Clinical and Research Laboratories of the Neurological Institute, New York City. Octavo of 346 pages, illustrated; cloth, $3.50. W. B. Saunders Company, Philadelphia and London. 1914.

The author of this book lays great stress on stating the technical details of the various serological methods of diagnosis and gives data which will be very instructive to many laboratory workers as well as to the neurologist. The part treating of serology of nervous and mental diseases of luetic etiology is particularly interesting and, owing to its conciseness, is very good for reference. LEEDE.

Nervous and Mental Diseases. By Joseph Darvin Nagel, M. D., Consulting Physician to the French Hospital of New York, etc. New (2nd) edition, revised and enlarged, 12mo, 293 pages, with 50 engravings and a colored plate. Cloth, $1.00, net. (The Medical Epitome Series.) Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This little compend is a synopsis of the subject, nervous and mental diseases, and will be of interest to the general practitioner who desires to look up something hurriedly. It is brought up to date and will be a convenience and addition to one's library. SMITH.

Motherhood. By E. S. Harris, M. D., Independence, Mo. Price 10c per copy. Sold only to physicians in lots of 25 or more with purchaser's name, address, etc., on front page. Sample copies 10c.

This is a monograph of thirty pages intended for the use of the obstetrician in imparting knowledge to the prospective mother. By presenting a copy to his patient he will convey to her a great deal of useful information concerning the period of pregnancy and the subsequent care of the infant. A great many useful hints and suggestions are given as to diet, digestive organs, clothing, etc., of the mother, as well as the preparation for her expected confinement. Following this are many useful data relating to the feeding and care of the child, which must sooner or later become the possession of every young mother. Used in this manner the little book will prove of much value to the busy physician.

Practitioner's Visiting List for 1915. This visiting list is the evolution of thirty years experience in meeting the needs of the practising physician. Among its useful features are tables of weights and measures, a scheme of dentition, incompatibilities, poisons and antidotes, directions for artificial respiration, table of doses, table of diseases and remedies, table of eruptive fevers, instructions for urinalysis and directions for ligating arteries. Four styles, weekly, monthly, perpetual, sixty patient. Pocket size substantially bound in leather, $1.25. net. Lea & Febiger, Philadelphia and New York.

The Physicians' Visiting List for 1915. With the present issue The Physicians' Visiting List enters upon the 64th year of its existence. The price for 25 patients per week is $1.25; for 50 patients, $1.50; for 75 patients, $2.25; for 100 patients, $2.50. Perpetual edition, for 1,300 names, $1.25; for 2,600 names, $1.50. P. Blakiston's Son & Co., Publishers, Philadelphia.

Clinical Aspects of Gastric Hemorrhage. The following conclusions might be offered upon the fragmentary experiences recorded:

1. The statistics of hemorrhage from the stomach whether of hematemesis or melena, or as revealed by occult blood-tests, or by string tests, are of very little value,

2. In the treatment of acute peptic ulcer, or acute exacerbation of chronic ulcer, especially when accompanied with hyperchlorhydria, food should not be held from the stomach at once.

3. Surgical treatment for gastric hemorrhage has a very limited but definite field.—John A. Lichty, M. D., Am. J. Med. Sc., Nov., 1914.